

**IN THE SUPERIOR COURT OF THE STATE OF DELAWARE**

DELAWARE DEPARTMENT  
OF NATURAL RESOURCES &  
ENVIRONMENTAL CONTROL, an  
Administrative Agency of the State  
of Delaware,

Plaintiff,

v.

MOUNTAIRE FARMS OF  
DELAWARE, INC., a  
Delaware Corporation,

Defendant.

Case No.

**CONSENT DECREE**

This Consent Decree (“Consent Decree”) is made and entered into as of this 31<sup>st</sup> day of May, 2018, by and between Mountaire Farms of Delaware, Inc. (“Mountaire”) and Plaintiff, Delaware Department of Natural Resources and Environmental Control “DNREC”) (collectively, the “Parties”), as more fully set forth herein:

**I. Recitals.**

1. WHEREAS, Mountaire operates a poultry processing facility located on and nearby Route 24 east of Millsboro, Delaware (the “Facility”); and

2. WHEREAS, DNREC issued the following permits to Mountaire related to the operation of its wastewater treatment facility (“WWTF”) at the Facility: (1) Spray Irrigation Permit No. 359191-04 (the “Spray Permit”); and (2)

Agricultural Utilization Permits Nos. AGU 1402-S- 03 and AGU 1403-S-03 (the “Land Application Permits”); and

3. WHEREAS, the Spray Permit allows Mountaire to operate a WWTF at the Facility that spray irrigates reclaimed wastewater onto agricultural farmland divided into thirteen (13) spray zones located north and south of State Route 24, Millsboro, Delaware. The facility is permitted to dispose of a monthly average quantity of 2.6 million gallons per day at a rate not to exceed 2.5 inches per acre averaged over a seven-day period. The facility has been designed for monthly effluent Total Nitrogen concentration of 15.6 mg/L. The total amount of nitrogen that may be applied annually to each spray field acre is 320 pounds. (Spray Permit attached as Exhibit A); and

4. WHEREAS, the Land Application Permits allows Mountaire to operate a land treatment system for the agriculture utilization of sludge generated by the WWTF. The permit is limited to the application of stabilized sludge from the WWTF at agronomic rates specified in the Land Application Permits. (Land Application Permits attached as Exhibit B); and

5. WHEREAS, at the end of August, 2017, Mountaire discovered that the WWTF was in failure due to a buildup of solids throughout the WWTF, as well as a depletion of oxygen in the aerobic portions of the WWTF (the “System Failure”); and

6. WHEREAS, the System Failure caused Mountaire's wastewater to exceed effluent limitations contained in the Spray Permit; and

7. WHEREAS, on September 5, 2017, DNREC's Groundwater Discharge Section ("GWDS") received a notice via cover letter attached to Mountaire's July Discharge Monitoring Report indicating that operations staff discovered that effluent composite samples were being collected at an invalid sampling point that was not representative of the total combined effluent at the Facility; and

8. WHEREAS, on September 7, 2017, the GWDS received verbal notice from the Facility's operational staff regarding the discovery of additional non-compliance items, which caused the WWTF to apply constituents that exceeded permit levels; and

9. WHEREAS, Mountaire undertook timely interim action to reduce the solids from the spray effluent and disinfect the effluent prior to application on the spray fields; and

10. WHEREAS, in November 2017 Mountaire submitted a Corrective Action Work Plan ("CAWP") setting forth interim measures and a proposal for long-term measures designed to lead to permit compliance, which Plan has been reviewed without objection by DNREC; and

11. WHEREAS, the CAWP is updated to show progress being made and items completed, and Mountaire provides bi-weekly reports to DNREC and participates in monthly meeting with the DNREC staff, and such actions having commenced in September 2017 and continuing to date; and

12. WHEREAS, on November 2, 2017, DNREC issued Notice of Violation No. W- 17-GWD-13 (the “NOV”) identifying a total of seventeen (17) categories of permit violations, including thirteen (13) categories of Spray Permit violations, and four (4) categories of Land Application Permit violations. (DNREC’s November 2, 2017 Notice of Violation is attached as Exhibit C); and

13. WHEREAS, on December 22, 2017, DNREC supplemented its NOV with a letter to Mountaire requiring additional corrective actions for violations of the Spray Permit and the Land Application Permit, AGU 1402-S-03. (DNREC’s December 22, 2017 letter attached as Exhibit D); and

14. WHEREAS, as a result of the failure of the WWTF, Mountaire will be unable to maintain full compliance with the Land Application Permits and the Spray Permit until such time that the long-term improvements to the WWTF are completed; and

15. WHEREAS, Mountaire has already implemented, and is in the process of further implementing interim measures designed to improve functionality of the

WWTF, and Mountaire has committed to fully implementing those interim measures as set forth herein; and

16. WHEREAS, the interim measures implemented by Mountaire after the occurrence of the System Failure have resulted in improvements in the quality of the effluent from the WWTF, but such efforts have not and cannot consistently achieve full compliance with the Spray Permit until the long-term Wastewater Treatment Facility System Upgrade is completed.

17. WHEREAS, Mountaire has retained a design engineer to design long-term system upgrades intended to ensure that the WWTF will be able to meet Spray Permit effluent limitations well into the future; and

18. WHEREAS, Mountaire's design engineer has prepared a preliminary Final Design Summary (the "Final Design Summary") of the proposed long-term WWTF system improvements, and has submitted this Final Design Summary to DNREC to demonstrate contemplation of a long-term corrective action strategy for the Facility; and

19. WHEREAS, it is in the best interests of the parties and maximum benefit to the environment that the remaining interim measures and long-term measures be implemented as soon as possible in accordance with the requirements hereof; and

20. WHEREAS, some but not all of the residential drinking water wells

located some distance from the Facility have tested positive for nitrate as nitrogen above the maximum safe drinking water standard of 10 mg/L; and

21. WHEREAS, Mountaire does not agree or concede that elevated levels of nitrates in the drinking water wells are related to the System failure, the WWTF or Mountaire's past and present operations; and

22. WHEREAS, while Mountaire maintains that it has not caused the nearby drinking wells to have elevated levels of nitrates, many recognize that there have historically been high levels of nitrates in the soils and groundwater in the area prior to the time that Mountaire commenced operations at the Facility. However, as a part of this settlement, Mountaire is committed, as an environmentally beneficial offset, to provide availability of a central water supply system, or in the alternative deep water supply wells, to the residents in the area as shown on the attached Exhibit F (Residential Area); and

23. WHEREAS, contemporaneously with the filing of this Consent Decree, and pursuant to its authority under 7 *Del. C.* § 6005, 7 *Del. C.* §6010(g)(2) and 7 *Del. C.* § 6025, DNREC has brought lawsuits against Mountaire in respect of: (i) violations of its Spray Permit and the Land Application Permits; (ii) handling, treatment, storage, transportation and disposal of solid waste that presents an imminent and substantial endangerment to health and the environment, (iii) handling, treatment, storage, transportation and disposal of solid waste that

constitutes open dumping of solid waste, and (iv) discharge of pollutants into waters of the State and United States through surface water and hydrogeologic connection of Mountaire-contaminated groundwater with Swan Creek, Indian River and Indian River Bay; and

24. WHEREAS, to mitigate for the environmental impact caused by Mountaire's system failure, permit violations and any disposal of solid waste at the Facility, and the contemplated non-compliance with permit conditions until such time that the WWTF upgrades are completed and compliance achieved, Mountaire will determine the quantity of nitrogen applied to the spray fields above permit limits, subject to approval by DNREC, and install a system of wells to withdraw and treat groundwater through the WWTF, commencing when the upgrade to the WWTF is completed and in operation.

25. WHEREAS, Mountaire agrees to undertake the actions set forth herein in addition to the interim and long-term corrective measures at the WWTF in order to resolve and satisfy the allegations set forth in the NOV and to return the WWTF to full compliance with the current or future Spray Permit and Land Application Permits; and

26. WHEREAS, the Parties commit to work cooperatively and communicate regularly to effectuate the purposes of this Consent Decree and allow the Facility to continue operations as long as the requirements of this Consent Decree

are being satisfied, and provided further the parties are committed to pursue timely and efficient performance of the actions identified in this Consent Decree; and

27. WHEREAS, the Parties have agreed that the resolution of any violations of permit conditions or of applicable law addressed by this Consent Decree is in the best interest of the Parties and in the public interest, and that entry of this Consent Decree without further litigation is the most appropriate means of resolving any outstanding matters under the Spray Permit and the Land Application Permits,

NOW THEREFORE, without any admission of fact or law, including without limitation any admission of potential violations of Delaware or federal law or regulations, the Parties hereby stipulate and agree as follows:

## **II. Objectives.**

28. It is the express purpose of the parties in entering into this Consent Decree to undertake actions to protect the public health or welfare or the environment at the Facility and to resolve the claims of DNREC against Mountaire, as provided in this Consent Decree.



### **III. Jurisdiction.**

29. This Court has jurisdiction over the subject matter pursuant to 7 *Del. C.* § 6005, 7 *Del. C.* §6010 (g)(2), 7 *Del. C.* §6025, 10 *Del. C.* § 541, and 10 *Del. C.* § 6501. This Consent Decree shall be governed by, and interpreted under, the laws of the State of Delaware. For purposes of enforcement or implementation of any provision of this Consent Decree, the parties submit to the jurisdiction of this Honorable Court.

### **IV. Application and Scope.**

30. The provisions of this Consent Decree shall apply to and be binding upon DNREC, Mountaire and their respective successors and assigns for the term of this Consent Decree. Execution of this Consent Decree by Mountaire is properly authorized to commit the resources reasonably necessary to satisfy this Consent Decree. Notwithstanding any other provision of this Consent Decree to the contrary, the State of Delaware Department of Justice is not a party to this Consent Decree and no aspect of its legal authority is disturbed by the content herein.

31. In the event Mountaire proposes to sell or transfer the Facility prior to termination of this Consent Decree under Section XX hereto, it shall advise any prospective purchaser or successor-in-interest about the existence of this Consent Decree in writing and provide therewith a copy of the Consent Decree. Mountaire shall also send a copy of such written and provide notification by certified mail,

return receipt requested contemporaneously to DNREC in accordance with Section XVIII of this Consent Decree. In addition, if Mountaire chooses to sell the Facility before this Consent Decree has been terminated, and the prospective purchaser chooses to continue to operate the Facility as a poultry processing facility, then such sale shall be contingent upon the purchaser agreeing to be bound by any remaining obligations applicable to the Facility under this Consent Decree.

32. No transfer of ownership or operation of the Facility, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve Mountaire of its obligation to ensure that the terms of this Consent Decree are implemented. At least 30 days prior to such transfer, Mountaire shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the portion of the proposed written agreement addressing this Consent Decree, to DNREC in accordance with Section XVII of this Consent Decree (Notices). Any attempt to transfer ownership or operation of the Facility without complying with this Paragraph constitutes a violation of this Consent Decree.

33. Nothing contained herein shall prevent Mountaire for any reason from discontinuing its poultry processing operations at the Facility and relinquishing its Spray Permit and Land Application Permit, in which case all of Mountaire's requirements to achieve Permit compliance under this Consent Decree shall be

eliminated, provide however, that the remaining requirements of this Consent Decree shall remain in effect. If Mountaire discontinues operations and relinquishes its Spray Permit and Land Application Permits, Mountaire will develop a mitigation plan for Department approval to resolve any outstanding mitigation commitments established via this Consent Decree.

#### **V. Compliance Requirements.**

34. **Interim Corrective Measures.** Mountaire agrees to make all reasonable efforts to implement, or to complete, in a timely manner the following interim measures, which are designed to improve functionality to the WWTF in anticipation of the WWTF system upgrades:

Interim Corrective Measures that have been taken prior to the entry of this Consent Decree and have been completed:

- a. Completion of Temporary Storage lagoon
- b. Sludge Removal from Final Pond
- c. Improvements to Activated Sludge System
- d. Pivot Maintenance
- e. Dissolved Air Flotation Unit Installed

Interim Corrective Measures that have been taken prior to the entry of this Consent Decree and are ongoing as of the execution date of this Consent Decree:

- f. Installation of Liquid Oxygen System
- g. Increased WWTF staffing
- h. Installation of Zee Breakpoint Chlorination System

Interim measures that are currently being undertaken but not yet completed are as follows and are scheduled for completion within the time frames indicated:

- i. Offal Room Screening Upgrade..... 18 months from entry of Consent Decree
- j. Removal of Solids 15 months from entry of  
Materials from Existing Consent Decree  
Anaerobic Lagoons until  
Operational.....
- k. Removal of Solids from the 3 months from entry of  
Oxidation Ditch.....
- l. Removal of Solids stored Time period allowed in  
Temporary Storage Lagoon..... Temporary  
Storage Lagoon Permit

35. **Wastewater Treatment Facility System Upgrade.** Within ten days of the entry of this Consent Decree, Mountaire shall submit to DNREC an application for a construction permit, developed in accordance with Section 6.5.1 of the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems, 7 Del. Admin. C. § 7101, for the

WWTF system upgrade. Such application shall include a schedule to completion within 24 months from the date of submittal. The Parties recognize the importance of timely completion of such system upgrade in order to reduce the amount of total nitrogen that will be applied to Mountaire's spray fields pending the completion and operation of the system upgrade. Accordingly, DNREC agrees to expedite its review of the construction permit application to the maximum extent practicable and permissible under applicable statutes and regulations in order to issue a construction permit in time to allow for completion of the system upgrade according to the schedule of completion set forth in the application. Prior to completion of construction and operational testing of the system upgrade, Mountaire shall submit to DNREC an application for an amendment to the Spray Permit, consistent with applicable regulations, in order to reflect the changes to the WWTF resulting from the system upgrade. From the time the application for amendment to the Spray Permit is filed with DNREC until such amended Spray Permit is issued, Mountaire shall operate the WWTF in accordance with all permit conditions and limitations of the current Spray Permit.

## **VI. Environmentally Beneficial Offset.**

36. **Alternative Water Supply.** The groundwater in the residential area shown as Exhibit F ("Residential Area") has historically, before Mountaire commenced operations at the Facility, contained high levels of nitrates. The

residences in the area, like many others in Sussex County, rely on shallow drinking water wells for a water supply, and on-site septic systems for domestic sewage disposal. Some, but not all residential drinking water wells in the Residential Area, have tested positive for nitrates as nitrogen above the safe drinking water standard. Mountaire shall, as an environmentally beneficial offset, seek to make available to the residential property owners in the Residential Area through Tidewater Utilities (“Tidewater”), a regulated public water supply company, the availability of a central water supply which meets safe drinking water standards. It is recognized by the parties that the Delaware Public Service Commission (PSC) has jurisdiction over the supply of drinking water to the Residential Area and imposes certain requirements before a central water supply system can be installed. DNREC shall cooperate and provide assistance in obtaining PSC approvals necessary to provide the availability of a central water supply system to the Residential Area. In the event that it is not possible to satisfy the PSC requirements for the installation of a central water supply system within the time frame set forth in Exhibit G, then as an alternative Mountaire shall offer to provide deep drinking water wells to the residential property owners in the Residential Area, in accordance with Exhibit G.

## **VII. Mitigation Measures.**

37. **Mitigation.** As a result of the System Failure Mountaire has sprayed and continues to spray effluent onto the spray fields which exceeds the Spray Permit limit for Total Nitrogen. To mitigate for the quantity of Total Nitrogen sprayed above the permit limit, and to abate conditions that may have been caused thereby, Mountaire shall at the time that the upgrade to the WWTF is completed and operational, withdraw groundwater from the spray fields by relocating its shallow plant process production wells to spray field locations containing elevated levels of nitrates, and then after using such withdrawn groundwater for plant processing purposes direct the resulting wastewater to the upgraded WWTF to achieve a reduction of nitrates in the groundwater concentrations. The manner in which the shallow plant processing wells are to be located and the methodology for determining the amount of Total Nitrogen to be reduced from the groundwater treatment is set forth in Exhibit H.

## **VIII. Monitoring Compliance Certification**

38. The Spray Permit as issued on July 31, 2017 and the Land Application Permits as issued on May 30, 2014 each contain monitoring requirements imposed on Mountaire for purposes of determining permit compliance. To assure that the monitoring requirements are being satisfied, that interim corrective actions are being properly performed and continued, and the Facility is being operated in accordance

with this Consent Decree, Mountaire shall, within sixty (60) days of the date of entry of this Consent Decree, submit to DNREC for approval, the names of a qualified licensed professionals or licensed consulting firms with operational sampling and monitoring experience in the spray irrigation of wastewater and agricultural land application of solids to certify that the monitoring requirements contained in the referenced Permits are being satisfied. The Certifications shall be provided to DNREC at the time monitoring results are submitted by Mountaire to DNREC, and such Certifications shall contain a description of any deficiencies and any corrective action taken by Mountaire. If Mountaire is not sooner relieved of this requirement by DNREC, then this requirement shall terminate at the time of termination of the Consent Decree.

#### **IX. Civil Penalties and Costs.**

39. Within 60 days after the Effective Date of this Consent Decree, Mountaire shall pay a civil penalty to DNREC in the amount of \$600,000.00, provided however, that the civil penalty shall be reduced by thirty (30) percent as a result of the obligation to provide the Environmentally Beneficial Offset as set forth in Section VI hereof. Payment of the resulting \$420,000.00 shall be made by funds available same day by certified or cashier's check payable to DNREC and delivered by overnight delivery to the attention of Deputy Attorney General Devera B. Scott,



Delaware Department of Justice, 102 W. Water Street, 3rd Floor, Dover, Delaware 19904.

40. In addition to the civil penalty, within 30 days after the Effective Date of this Consent Decree, Mountaire shall pay the costs incurred by DNREC in the investigation of the violations alleged in the Complaint in the amount of \$25,000.00. Payment shall be made by funds available same day by certified or cashier's check payable to DNREC and delivered by overnight delivery to the attention of Deputy Attorney General Devera B. Scott, Delaware Department of Justice, 102 W. Water Street, 3<sup>rd</sup> Floor, Dover, Delaware 19904.

41. Mountaire shall submit the civil penalty and costs with a transmittal letter, which shall state that the payment is for the civil penalty or costs, respectively, owed pursuant to the Consent Decree in *DNREC v. Mountaire Farms of Delaware, Inc.*, and shall reference the civil action number.

42. The Parties further agree that any violations of the provisions of this Consent Decree may result in the immediate issuance of a cease and desist order pursuant to 7 *Del. C.* § 6018 to Mountaire and may result in further enforcement action that may include, but is not limited to, additional civil penalties, administrative penalties, criminal penalties, or injunctive relief.

43. DNREC is not required to seek penalties under this Section for any specific violation, and the failure of DNREC to seek a penalty for any specific

violation shall not waive or affect DNREC's rights to seek penalties for any future violation of the Consent Decree.

**X. Stipulated Penalties.**

44. Mountaire shall be liable for stipulated penalties for violations of this Consent Decree as specified below, unless excused under Section XI (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Consent Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Consent Decree.

45. Late Payment of Civil Penalties and Costs. If Mountaire fails to pay the civil penalties or costs required under Section IX (Civil Penalties and Costs) of this Consent Decree when due, Mountaire shall pay a stipulated penalty of \$1,000.00 per day for each day that the payment is late after DNREC provides at least five (5) business days advance written notice that the payment is due.

46. Compliance Requirements. Stipulated penalties shall accrue for each violation of the obligation to implement interim or long-term measures by the final date required under Section V of this Consent Decree:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$1,000	Each Day

47. Stipulated penalties under this Section shall begin to accrue on the day after performance is due or on the day that a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.

48. Within 20 Business Days of a written demand by Plaintiff, Mountaire shall either pay stipulated penalties or invoke the Dispute Resolution provisions of Section XIV of this Consent Decree.

49. DNREC may in the unreviewable exercise of their discretion, reduce or waive stipulated penalties otherwise due it under this Consent Decree

50. Stipulated penalties shall continue to accrue as provided in Section IX, during any Dispute Resolution, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of DNREC, which is not appealed to the Court, Mountaire may be required to pay accrued penalties determined to be owing to DNREC within 30 days of the effective date of the agreement or the receipt of DNREC's decision or order if the dispute resolution process is invoked in bad faith.

b. If the dispute is appealed to the Court and DNREC prevails, Mountaire shall pay all accrued penalties determined by the Court to be owing within 60 days of receiving the Court's decision or order, except as provided in subparagraph c, below.

c. If any Party appeals the Court's decision, Mountaire shall pay all accrued penalties determined to be owing, together with interest, within 15 days of receiving the final appellate court decision.

51. Mountaire shall pay stipulated penalties owing to DNREC in the manner set forth and with the confirmation notices required by Section X, respectively, except that the transmittal letter shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid.

52. If Mountaire fails to pay stipulated penalties according to the terms of

this Consent Decree, Mountaire shall be liable for interest on such penalties, as provided for in 7 *Del.C.* § 6005, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit DNREC from seeking any remedy otherwise provided by law for Mountaire's failure to pay any stipulated penalties. Mountaire does not waive and specifically reserves all of its defenses to any such action by DNREC.

53. The stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to DNREC for Mountaire's violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of relevant statutory or regulatory requirements, Mountaire shall receive full credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

## **XI. Force Majeure.**

54. A “force majeure” for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Mountaire that delays or prevents the performance of any obligation under this Consent Decree despite Mountaire’s best efforts to fulfill the obligation, taking into account DNREC’s commitment to act in a timely manner regarding any matter under consideration or review. A “force majeure” does not include the failure of any of Mountaire’s officers, directors, employees, agents, or contractors to take any actions necessary for Mountaire to comply with the provisions of this Consent Decree, nor does it include the failure of any of Mountaire’s officers, directors, or employees to perform their duties appropriately. The requirement that Mountaire exercise its best efforts to fulfill the obligations, including using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. A force majeure does not include Mountaire’s financial inability to perform any obligation under this Consent Decree.

55. In the event of a force majeure Mountaire shall notify DNREC verbally or in writing as soon as practicable, but in any event within forty-eight hours from the time when Mountaire first knew of the event, or should have known of the event by exercise of due diligence. In this notification or subsequent

communication, Mountaire shall specifically reference this Paragraph of this Consent Decree and describe the anticipated length of time the delay may persist, the cause or causes of the delay, and the measures taken or to be taken by Mountaire to prevent or minimize the delay and the schedule by which those measures will be implemented. Mountaire shall adopt all reasonable measures to avoid or minimize such delays.

56. Failure by Mountaire to comply with the notice requirements of Paragraph 55 as specified above shall render this Section voidable by DNREC.

57. DNREC shall acknowledge receipt of Mountaire's claims of a delay or impediment to performance within five (5) business days of DNREC's receipt of the Force Majeure notice required under Paragraph 55.

58. If DNREC agrees that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Mountaire, and that Mountaire could not have prevented the delay by the exercise of due diligence, then DNREC shall extend the required deadline(s) or all requirement(s) affected by the delay by a period equivalent to the delay caused by such circumstances, or such other period as may be appropriate in light of the circumstances. Such an extension by DNREC shall modify this Consent Decree and does not require Court approval.

59. Unanticipated or increased costs or expense associated with the performance of Mountaire's obligations under this Consent Decree shall not

constitute circumstances beyond Mountaire's control, or serve as a basis for an extension of time under this Section.

60. Notwithstanding any other provision of this Consent Decree, no inference shall be drawn nor presumption adverse to any Party be established as a result of Mountaire's transmitting a notice of Force Majeure.

## **XII. Release of Liability.**

61. Mountaire's satisfaction of its obligations under this Consent Decree shall resolve and release Mountaire of any and all liability of Mountaire to DNREC for its failure in the past and for the period from entry of this Consent Decree until the system upgrade is completed to meet the effluent limitations and other conditions contained in the Spray Permit and to satisfy the compliance requirements in the Land Application Permits, including but not limited to any such liability that might be imposed for violations alleged in the NOV, such liability that might be imposed for alleged contribution to the past or present handling, storage, treatment, transportation or disposal of a solid waste that may present an imminent and substantial endangerment to health or the environment, and such liability that might be imposed as a result of alleged disposal into an "open dump" as defined under 7 *Del. C.* § 6002(35) and 42 U.S.C. § 6403(14), and such liability that might be imposed as a result of discharge of pollutants into waters of the State and Unites



States through surface water and hydrogeologic connection of Mountaire contaminated groundwater with Swan Creek, Indian River, and Indian River Bay.

62. During the time from the entry of this Consent Decree until Mountaire applies for an amended Spray Permit as required under Paragraph 35 of this Consent Decree, Mountaire shall, during such period, undertake all practical and reasonable measures to operate the WWTF in a manner that achieves results that approach full compliance with the Spray Permit. Mountaire shall further attempt to minimize the impact that the construction of the WWTF system upgrade has on interim operations of the WWTF. Provided Mountaire undertakes the practical and reasonable measures required under this Paragraph 62, Mountaire shall not have any liability for failing to meet the conditions of the Spray Permit prior to the date it submits said application for an amendment to the Spray Permit as required under Paragraph 35.

63. To the extent Mountaire takes required actions identified in this Consent Decree, the release of liability set forth in Paragraph 61 above shall extend through the time this Consent Decree is terminated pursuant to Section XX. This Paragraph is not intended nor shall it be construed to limit the provisions of Paragraph 61 above.

### **XIII. General Provisions**

64. **Court Enforcement.** Upon execution of this Agreement, it shall be entered as an Order of the Superior Court of Delaware (the “Court”). The Court retains jurisdiction over both the subject matter of this Consent Decree for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes.

65. **Modification.** Except for the Court’s exercise of its powers, this agreement may only be modified by written consent of the undersigned parties or their successors. Any changes or amendments to the agreement shall be submitted to the Court for purposes of the entry of a Court Order to reflect the revised agreement. Nothing in this Consent Decree shall be deemed to alter the Court’s power to modify, enforce, supervise, or approve modifications to this Consent Decree.

66. **Admissibility.** This Agreement shall not be deemed an admission of liability or wrongdoing by any Party, and its admissibility shall be limited in accordance with Rule 408 of the Delaware Rules of Evidence in any court proceeding, except in an action to enforce this Consent Decree.

67. **Other Laws.** Except as specifically provided by this Consent Decree, nothing in this Consent Decree shall relieve Mountaire of its obligation to comply with all applicable federal, state, and local laws and regulations.

#### **XIV. Dispute Resolution.**

68. All disputes arising under the terms of the Consent Decree shall be resolved in accordance with the following procedure.

69. Any party wishing to initiate dispute resolution shall provide the other with a written statement outlining the nature of the dispute (the “Notice of Dispute”). The parties, within ten (10) days of the receipt of the Notice of Dispute, shall meet and confer to attempt to resolve their differences informally.

70. If the parties are unable to resolve the dispute within fourteen (14) days of receipt of the Notice of Dispute, or such longer time to which the parties may agree to pursue informal dispute resolution, the dispute shall be submitted to the Court for a hearing.

## **XV. Information Collection, Retention, and Sharing.**

71. **Right of Entry.** DNREC and their representatives, including attorneys, contractors, and consultants, shall have a right of entry upon the premises of the Facility at any time for any lawful purpose, including, but not limited to:

- a. Monitor the progress of activities required under this Consent Decree;
- b. Verify any data or information submitted to DNREC;
- c. Obtain samples and, upon request, splits of any samples taken by Mountaire or its representatives, contractors, or consultants;
- d. Inspect equipment at the Facility;
- e. Inspect and copy all records maintained by Mountaire related in any way to this Consent Decree;
- f. Obtain documentary evidence, including photographs and similar data; and
- g. Assess Mountaire's compliance with this Consent Decree.

72. Nothing in this Consent Decree shall limit the authority of DNREC to conduct tests and inspections under applicable statutory and regulatory provisions.

73. **Information Sharing.** Mountaire and DNREC shall cooperate with the signatories to the Agreement by providing statistics, analysis, audits, and other information regarding compliance with the Agreement. At reasonable times and upon reasonable notice, which need not be more than 30 days, Mountaire shall provide to DNREC copies of documents or things requested by DNREC for the purpose of determining whether Mountaire is complying with this agreement and order. Upon reasonable request and within 30 days, DNREC shall provide to Mountaire documents or things requested upon which DNREC relies in claiming Mountaire is not complying with this Consent Decree. Upon request, Mountaire shall provide DNREC or its authorized representatives with splits of any samples taken by Mountaire. Upon request, DNREC shall provide Mountaire with splits of any samples taken by DNREC or its authorized representatives. Mountaire shall provide DNREC copies of all analytical results, regardless of whether the results are specifically requested by DNREC.

74. **Recordkeeping, Record Retention, and Reporting.** Until three years after the termination of this Consent Decree, Mountaire shall make all reasonable efforts to retain, and shall instruct its contractors and agents to make all reasonable efforts to preserve, all non-identical copies of all final documents (including such documents in electronic form) in its or its contractors' or agents' possession that relate to Mountaire's performance of its obligations under this

Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. The information-retention requirement shall be in addition to any similar information-retention requirement included in any permits, and shall not affect or invalidate any such permit requirements. At any time during this information-retention period, upon request by DNREC, Mountaire shall provide copies of any documents required to be maintained under this Paragraph, subject to Mountaire's right to claim any such documents as privileged under the attorney-client privilege or any other privilege recognized by federal law. If Mountaire asserts such a privilege, it shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Mountaire. However, no final documents or records created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

75. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by DNREC pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect

any duty or obligation of Mountaire to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

**XVI. Effect of Settlement/Reservation of Rights.**

76. This Consent Decree resolves the claims of DNREC for the violations alleged in the Complaint filed in this action and included in any Notices of Violation issued to Mountaire by DNREC.

77. DNREC reserves all legal and equitable remedies available to enforce the provisions of this Consent Decree, and DNREC does not waive and specifically reserves all defenses to any such claims. Except as provided in Paragraphs 61 and 62 hereof this Consent Decree shall not be construed to limit the rights of DNREC to obtain penalties or injunctive relief under any applicable law, regulation, or permit. DNREC further reserves all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or environment that arise at, or posed by, the Facility, whether related to the violations addressed in this Consent Decree or otherwise. DNREC does not waive and specifically reserves all defenses to any such claims.

78. Nothing in this Consent Decree shall affect, impair, or otherwise restrict the legal authority of the State of Delaware Department of Justice with respect to any of its obligations and duties to enforce the criminal and civil laws of the State of Delaware. Nothing in this Agreement shall constitute any form of

release of claims by the Department of Justice. The fact that a Deputy Attorney General has reviewed this Agreement and opined about the appropriateness of its legal form does not render the Department of Justice a signatory or a party to this Agreement.

79. This Consent Decree is not a permit, or a modification of any permit, under any federal, state, or local laws or regulations. Unless addressed otherwise herein, Mountaire is responsible for achieving and maintaining compliance with all applicable federal, state, and local laws, regulations, and permits. Unless specifically set forth herein, Mountaire's compliance with this Consent Decree does not guarantee compliance with any applicable federal, state, or local laws or regulations. Mountaire's compliance with this Consent Decree shall be no defense to any action commenced by DNREC pursuant to any such laws, regulations, or permits. Unless specifically set forth herein, nothing in this Consent Decree shall be construed to be a ruling on, or determination of, any issues related to any federal, state, or local permits. Except as expressly set forth herein, it is understood that the interim actions undertaken by Mountaire under this Consent Decree to achieve compliance shall not require individual permits from DNREC and shall be subject to the provisions of Paragraphs 35, 61, 62, and 76 of this Consent Decree.

80. Nothing in this Agreement shall alter DNREC's independent statutory, regulatory, and permitting discretion, and nothing in this Agreement shall



be construed to require DNREC to pay or appropriate any monies or expend any funds.

81. This Consent Decree does not limit or affect the rights of Mountaire or of DNREC against any third parties, not party to this Consent Decree.

82. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree. This Consent Decree affects the rights, obligations, and duties of the Parties only. Notwithstanding any other provision of this Consent Decree to the contrary, nothing in this Consent Decree is intended to, nor shall it be interpreted or construed in a manner which shall: (a) grant any third party the right to enforce any of the terms, rights, or obligations set forth in this Consent Decree; (b) confer any substantive or procedural rights or privileges to any third party in relation to or arising out of any collateral civil or criminal legal proceeding; or (c) waive or otherwise affect the sovereignty of the State of Delaware or the application of 10 *Del. C. § 4001, et seq.* to any civil proceeding involving any officer, employee, or agent of the State of Delaware.

#### **XVII. Costs.**

83. Except as DNREC's costs, as provided in Paragraph 40, the Parties shall bear their own costs of this action, including attorney's fees.

### **XVIII. Notices.**

84. Unless otherwise provided herein, notifications to or communications with DNREC or Mountaire shall be deemed submitted on the date they are postmarked and sent either by overnight receipt mail service or by certified or registered mail, return receipt requested, or on the date that they are hand delivered. Except as otherwise provided herein, when written notification or communication is required by this Consent Decree, it shall be addressed as follows:

As to Mountaire:

Michael W. Tirrell  
Executive Vice President, Processing Operations  
Mountaire Farms of Delaware, Inc.  
P.O. Box 1320  
29106 John J. Williams Hwy.  
Millsboro, DE 19966

with a copy to:

F. Michael Parkowski, Esq.  
Michael W. Teichman, Esq.  
Elio Battista, Jr., Esq.  
Parkowski, Guerke & Swayze, P.A.  
1105 N. Market Street, 19th Floor  
Wilmington, DE 19801

---

As to DNREC:

The Honorable Shawn M. Garvin  
Secretary  
State of Delaware  
Department of Natural Resources and Environmental Control  
89 Kings Highway  
Dover, DE 19904

with a copy to:

Devera Scott, Esq.  
Deputy Attorney General  
Delaware Department of  
Justice  
102 West Water Street  
Dover, DE 19904

85. Either party may change either the notice recipient or the address for providing notices to it by serving the other party with a notice setting forth such new notice recipient or address.

**XIX. Effective Date.**

86. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court.

**XX. Termination and Satisfaction.**

87. This Paragraph establishes the procedures and standards for termination of this Consent Decree.

a. The standard for termination of this Consent Decree is Mountaire's satisfaction of the requirements of this Consent Decree. Specifically, the requirements for termination include payment of any civil penalties and stipulated penalties that may be due to DNREC under this Consent Decree and implementation of the Compliance Requirements under Sections V, VI, VII, and VIII of this Consent Decree.

b. The procedure for termination is as follows: if Mountaire believes that it is in compliance with the requirements of this Consent Decree, and has paid the civil penalties and stipulated penalties required by this Consent Decree, then Mountaire shall so certify to DNREC. Within sixty days after receipt of Mountaire's certification, DNREC shall provide a written response to Mountaire indicating whether DNREC concurs that Mountaire is in compliance with the requirements of this Consent Decree through the date of the certification and has paid the civil penalties required by this Consent Decree. To the extent that DNREC states in such response that it concurs with Mountaire's

certification, then this Consent Decree shall be terminated, effective on the date of Mountaire's certification. To the extent that DNREC states in its response that it does not concur with Mountaire's certification, then DNREC shall identify within its response those requirements of the Consent Decree with which DNREC asserts that Mountaire is not in compliance, and/or any civil penalties that DNREC asserts are due and owing from Mountaire under this Consent Decree. Any disagreement between the Parties with respect to termination under this Paragraph shall be submitted to this Honorable Court for resolution. Termination of this Consent Decree under this Paragraph 86 shall conclusively and finally establish that Mountaire has satisfied all the requirements of this Consent Decree for purposes of Section XVI (Effect of Settlement/Reservation of Rights).

#### **XXI. Miscellaneous Provisions.**

88. Each party declares and represents that no promise, inducement, or agreement not herein expressed has been made to it. Each party acknowledges that it and its counsel have received this Consent Decree and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Consent Decree. Each party acknowledges and agrees that this Consent Decree supersedes all

previous settlement negotiations and that this Consent Decree contains the entire agreement between the parties hereto.

89. All submissions shall be considered effective upon receipt, unless otherwise provided in this Consent Decree.

90. This Court retains jurisdiction over both the subject matter of this Consent Decree for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes.

91. The parties consent to the entry of this Consent Decree without further notice.

92. Each undersigned representative of a Party to this Consent Decree certifies that he or she is authorized to enter into the terms and conditions of this Consent Decree, and to execute and legally bind such party to this Consent Decree.

93. This Consent Decree may be signed and dated in any number of counterparts, each of which shall be an original, and such counterparts shall together be one and the same Consent Decree.

*Signature Pages Follows*

FOR THE DEPARTMENT OF NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL

By: 

Date: 5/31/18

Shawn M. Garvin, Secretary  
State of Delaware  
Department of Natural  
Resources and  
Environmental Control  
89 Kings Highway  
Dover, DE 19901

Approved as to

form:


Devera Scott, I.D. No. **4756**  
4756 Deputy Attorney  
General  
State of Delaware Department of  
Justice 102 West Water. Street  
Dover, DE 19904

FOR MOUNTAIRE FARMS OF DELAWARE, INC.

By: 

Date: 05.31.18

Michael W. Tirrell  
VP Human Resources and Business  
Services  
Mountaire Farms of Delaware, Inc.  
P.O. Box 1320  
29106 John J. Williams  
Hwy. Millsboro, DE 19966

By: 

Date: 5/31/18

F. Michael Parkowski, Esquire, I.D. No. 7  
Michael W. Teichman, Esquire, I.D. No. **3323**  
3323 Elio Battista, Jr., Esquire, I.D. No. **3814**  
3814 Parkowski, Guerke & Swayze, P.A.  
1105 N. Market

Street 19th Floor  
Wilmington, DE  
19801

SO ORDERED, this \_\_\_\_\_ day of \_\_\_\_\_,  
2018.

---

Judge



**EXHIBIT A**  
**SPRAY PERMIT**

Issued by: Groundwater Discharges Section  
Division of Water  
Department of Natural Resources  
and Environmental Control  
89 Kings Highway  
Dover Delaware 19901  
302-739-9948

DEN Number: 359191-04  
Effective Date: July 31, 2017  
Expiration Date: July 30, 2022

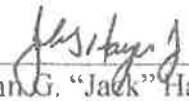


AUTHORIZATION TO OPERATE AND MAINTAIN  
UNDER THE LAWS OF THE  
STATE OF DELAWARE

**PERMITTEE:** **Mountaire Farms of Delaware, Inc.**  
P.O. Box 1320  
Millsboro, Delaware 19966

**FACILITY:** **Mountaire Farms of Delaware, Inc.**

1. Pursuant to the provisions of 7 Del. C. §6003, **Mountaire Farms of Delaware, Inc.** is herein authorized to operate and maintain the facility known as **Mountaire Farms of Delaware, Inc.** located on Route #24, approximately 2.0 miles east of Millsboro, Sussex County, Delaware to spray irrigate treated poultry processing wastewater and treated sanitary waste to an area north of State Route #24 "WHBJ" consisting of 619 acres and to areas south of State Route #24 "Center Block System" consisting of 343 acres.
2. The effluent limitations, monitoring requirements and other permit conditions are set forth herein.

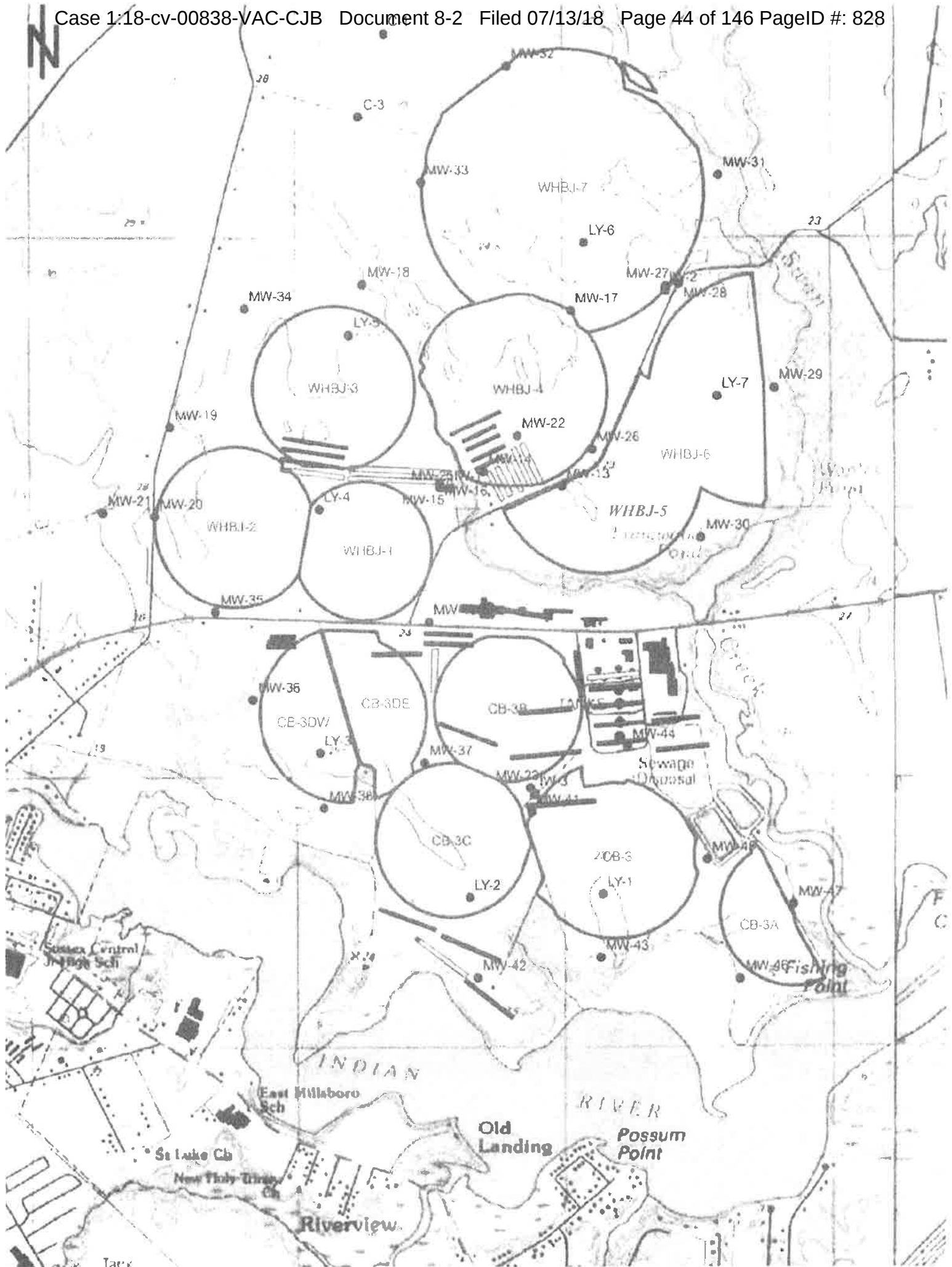
  
John G. "Jack" Hayes, Jr.  
Environmental Program Manager  
Groundwater Discharges Section  
Division of Water  
Delaware Department of Natural Resources  
and Environmental Control

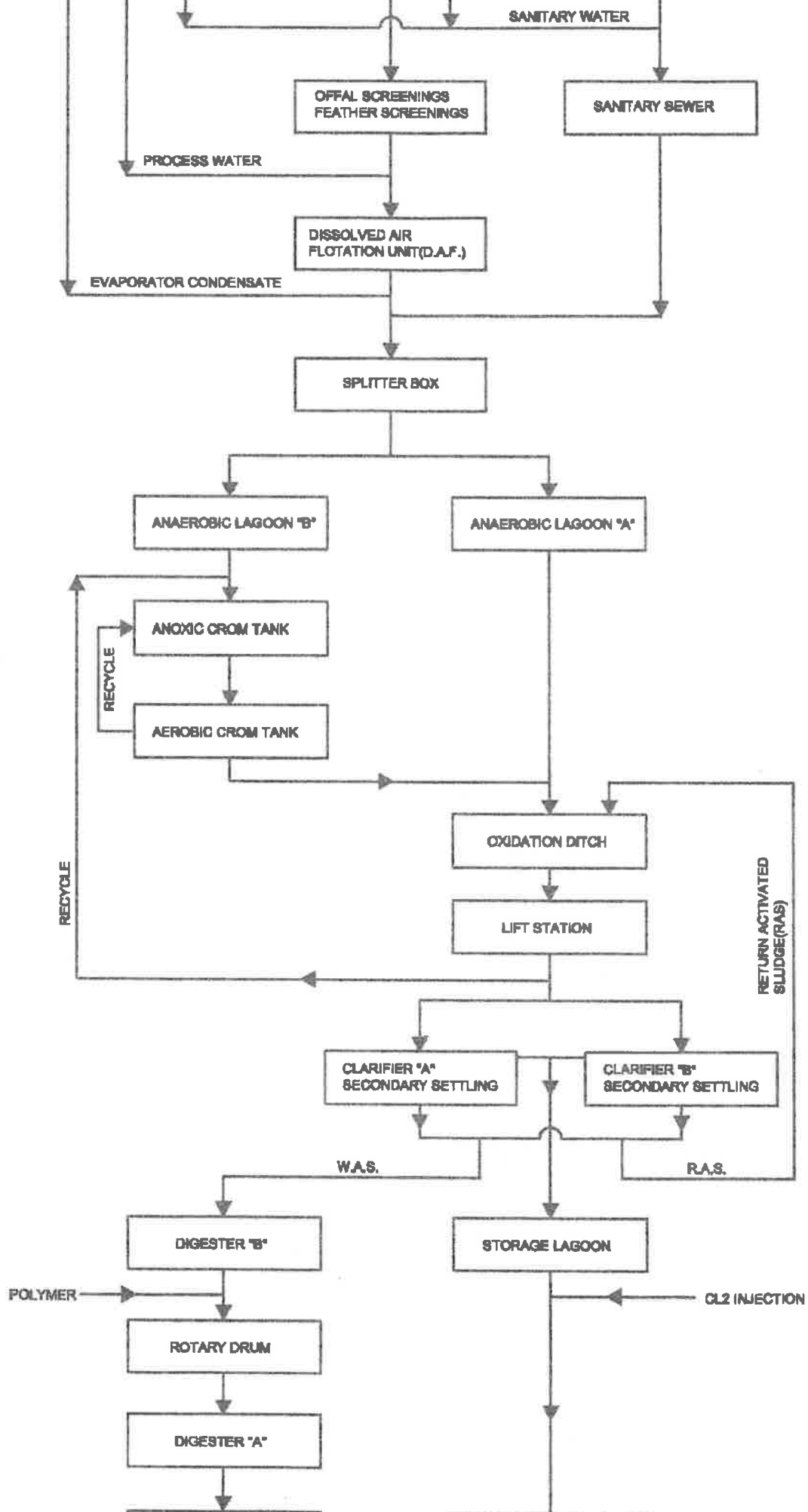
7/31/17  
Date Signed

DEN Number: 359191-04  
Effective Date: July 31, 2017  
Expiration Date: July 30, 2022  
Page 2 of 26

### LOCATION MAP







## PART I

## A. GENERAL DESCRIPTION OF OPERATION/DISCHARGES

The treatment facility is designed to treat poultry processing wastewater and sanitary waste. The treatment process includes: primary and secondary screening, dissolved air flotation (DAF), anaerobic lagoon biological treatment/equalization (2 lagoons), activated sludge biological treatment with biological nutrient reduction capability – Modified Ludzack-Ettinger (MLE), secondary clarification (2 units), sludge digestion and thickening, disinfection (chlorination) and a post treatment spray irrigation storage lagoon.

The treated effluent is spray irrigated onto approximately 928 acres. Seven center pivot spray irrigation systems are located north of State Route #24 and are designated as WHBJ Systems Nos. 1, 2, 3, 4, 5, 6, 7. And, six center pivot spray irrigation systems are located south of Route #24 and are designated as Center Block Systems Nos. 3, 3A, 3B, 3C, 3DE and 3DW.

The fields are maintained in corn, small grains (barley and wheat), and soybeans.

Approximately 542 acres are permitted for wet and cold weather use.

Spray Field Listing per 2017 Vegetative Management Plan Update Attachment D:

Spray Field Listing

Spray Field	Irrigated Acres	Irrigated Acres by Farming Group	Tilled Acres by Farming Group	% Irrigated Acreage	Wet Weather Approved	Wet Weather Acres	2.5 "/wk (gals)
Centerblock 3 "	75.33	104.30	133.00	78.4%	Yes*	60.00	5,105,294
Centerblock 3A	28.97					-	1,963,366
Centerblock 3B	64.24	170.52	202.00	84.4%	Yes	64.24	4,353,898
Centerblock 3C	64.72				Yes	64.72	4,386,229
Centerblock 3D East	41.56				Yes	41.56	2,816,621
Centerblock 3D West	41.97	41.97	48.00	87.4%	Yes	39.20	2,844,407
WHBJ 1	54.29	119.62	150.00	79.7%	Yes	54.29	3,679,363
WHBJ2	65.33				Yes	65.33	4,427,570
WHBJ 3 "	78.00	78.00	101.00	77.2%	Yes*	59.00	5,286,246
WHBJ 4 "	76.84	76.84	101.00	76.1%	Yes*	74.00	5,207,630
WHBJ 5	64.42	137.33	165.00	83.2%	-		4,365,897
WHBJ6	72.91				-		4,941,285
WHBJ7	199.54	199.54	231.00	86.4%	-		13,523,303
	<b>928.12</b>	<b>928.12</b>	<b>1131.00</b>	<b>81.6%</b>		<b>542.03</b>	<b>62,900,911</b>

\*Portions of fields not allowed during wet/frozen weather. Area reduction estimated.

## B. DOCUMENTATION

The slow rate land treatment operation shall be conducted in accordance with the following documents:

1. The State of Delaware, Department of Natural Resources and Environmental Control's Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems, (Regulations).
2. The Operations and Management Plan submitted by Townsends Inc., during 1988.
3. The letter to Ronald E. Graeber from Metcalf and Eddy dated July 26, 1989 addressing the plan of action for the effluent disinfection system.
4. The letter to Gordon Serman from Bruce B. Bagley dated August 15, 1995 asking Townsends Inc. to address several outstanding issues.
5. The letter to Bruce B. Bagley from Robert A. Palczewski dated October 13, 1995 addressing the decreased buffer zone distance and monitoring plan.
6. A letter to Joseph Mulrooney from Bruce Stephens dated August 5, 1997 identifying wet weather irrigation fields at the Townsends treatment facility.
7. A Detail Soil Investigation for Cordrey and Frame Farms dated February 1999 submitted by Bradley Cates.
8. A report submitted by Bruce Stephens from James E. Havey dated March 23, 1999 addressing the treatment capacity of the Townsend's wastewater treatment capability and future wastewater treatment needs.
9. Plans and Specifications dated June 2, 1999 submitted by Metcalf and Eddy detailing treatment plant upgrades to increase future treatment capacities.
10. A report submitted by Gordon Serman to Doris Hamilton on August 24, 1999 identifying the wet weather spray irrigation fields.
11. A letter dated April 7, 2000 from George C. White notifying DNREC of the sale of the Townsend Facility to Mountaire Corporation.
12. A letter to Bruce B. Bagley from Jeff Smith dated November 8, 2002 providing detailed calculations on the Stormwater Improvement Project and site plan of the facility.
13. A Vegetative Management Plan for Spray Irrigation of Treated Wastewater prepared by George, Miles and Buhr, LLC dated January 31, 2003.
14. A Spray Irrigation Permit Application submitted by Mountaire Farms, Inc. on October 23, 2008.
15. The Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABA Associates, Inc. dated December 7, 2010.
16. Any other correspondence, documentation and/or reports related to the **Mountaire Farms of Delaware, Inc. Wastewater Treatment Facility** received and approved by the Groundwater Discharges Section and/or sent by the Groundwater Discharges Section.

DEN Number: 359191-04  
 Effective Date: July 31, 2017  
 Expiration Date: July 30, 2022  
 Page 7 of 26

### C. INFLUENT LIMITATIONS

1. The monthly average influent to the wastewater treatment facility shall not exceed 2.6 million gallons per day in any calendar month calculated as Total Monthly Volume divided by the number of days in the month.

The connection of additional units or waste streams other than those indicated in the approved design documents referenced in Part I.B is prohibited without prior written approval from the Groundwater Discharges Section.

Design Treatment Capacity: 2.6 MGD Monthly Average [calculated as Total Monthly Volume divided by the number of days in the month]

### D. SPRAYED EFFLUENT LIMITATIONS

During the period beginning on the effective date and lasting through the expiration date of this permit, the Permittee is authorized to discharge to the spray irrigation field(s) identified on page 1, in Part I.A, and depicted on page 3 of this permit the quantity and quality of effluent specified below and in accordance with the design documents listed in Part I.B of this permit:

1. The monthly average quantity of effluent discharged from the wastewater treatment facility to the spray fields shall not exceed 2.6 million gallons per day (MGD) calculated as Total Monthly Volume divided by the number of days in the month.
2. The average weekly quantity of effluent discharged to any portion of the spray irrigation field shall not exceed 2.5 inch per acre averaged over a 7 day rolling period.
3. The quantity of effluent discharged to any portion of the spray irrigation field shall not exceed 0.25 inch/acre/hour.
4. There shall be a minimum of a three hour rest period between applications of wastewater to the spray fields when the center pivot systems (WHBJ 4, 5, 6, Center Block 3A, 3D east and west) contact any permanent end stop. On all other spray fields, there shall be a sufficient rest period between applications to prevent field saturation and runoff from occurring in any part of the field.
5. The pH of the effluent shall not be less than 5.5 standard units nor greater than 9.0 standard units at any time.
6. The total residual chlorine concentration shall not be less than 1.0 mg/L nor more than 4.0 mg/L at any time.
7. The Chloride concentration of the effluent shall not exceed 250 mg/L on an average annual basis.
8. Design Effluent Nitrogen Concentration:

The facility has been designed for a monthly effluent Total Nitrogen concentration of 15.6 mg/L.<sup>1</sup>

If the effluent exceeds a Total Nitrogen concentration of 19.5 mg/L [Design Value + 25%] in any calendar month, the permittee shall resample the wastewater and submit the additional analyses to the Groundwater Discharges Section. If the effluent exceeds 19.5 for over a three month period, the permittee must have the system evaluated to determine the cause and submit a revised Design Engineer Report to the Groundwater Discharges Section. If the effluent exceeds 29.3 [Design Value +50%], the Department may invoke the provisions of Part V.A.1 of this permit. [Also reference Part II.B.1.]

---

<sup>1</sup> Design Effluent Nitrogen Concentration is in accordance with Page 2 and Attachment B Page 1 and 2 of the Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABA Associates, Inc. dated December 7, 2010.



DEN Number: 359191-04  
 Effective Date: July 31, 2017  
 Expiration Date: July 30, 2022  
 Page 8 of 26

9. The total amount of nitrogen that may be applied to each spray field acre shall not exceed the following amounts. These amounts include supplemental fertilizers, the nitrogen supplied from the effluent, and any other source.

Spray Field Crop Type	Nitrogen Loading Limit <sup>2</sup>
Corn and Small Grain	320 lbs/acre
Soybeans and Small Grain	320 lbs/acre

Adjustments and reductions for denitrification, ammonia volatilization, evapotranspiration and plant uptake are not to be factored into the annual reporting of Total Nitrogen Loading for demonstration of compliance with this limit.

If any crops are not removed from the spray irrigation fields, then the total nitrogen application rate for the field must be reduced by the amount of nitrogen that would be removed by harvesting the crop as detailed in the facility's Design Engineer Report.

The limitation of total nitrogen that can be applied to each acre may be adjusted by the Groundwater Discharges Section if it can be shown through subsequent analysis of the crop removed that the total nitrogen removed with the crop is equal to the amount applied from the effluent and additional fertilizer applications. Supplemental additions of commercial fertilizers shall be limited to amounts necessary to meet crop needs in accordance with the written recommendations of the University of Delaware Cooperative Extension Service, or a Delaware Certified Crop Advisor, for the specified crop and anticipated yield.

10. The discharge to the spray irrigation fields shall be free from material such as floating solids, sludge deposits, debris, scum, oil and grease.
11. The facility has been designed for limited public access. The treated wastewater utilized for limited public access sites must meet the following daily permissible average concentrations. The daily average concentration shall be determined by the summation of all the measured daily concentrations obtained from composite samples divided by the number of days during the calendar month when the measurements were made.
- The 5-day Biochemical Oxygen Demand (BOD<sub>5</sub>) of the treated wastewater must not exceed 50 mg/L.
  - Disinfection of wastewaters containing domestic waste is required to yield a discharge not to exceed 200 col/100 mL Fecal Coliform.
  - The treated wastewater must not contain more than 50 mg/L of Total Suspended Solids.

Parameter	Daily Permissible Average Concentration
BOD <sub>5</sub>	50.0 mg/L
Fecal Coliform	200 colonies/100 mL
Total Suspended Solids	50 mg/L

#### E. FACILITY CLASSIFICATION

1. A classification was performed on the permitted facility in accordance with Regulations Licensing Operators of Wastewater Facilities. The wastewater treatment system is designated as a Class IV Facility. The facility must be under the direction of a Class IV Licensed Operator in Direct Responsible Charge for the facility who is available at all times. A licensed operator, operating under the direction of the licensed operator in Direct Responsible Charge for the facility, must be available when the spray irrigation system is in operation.

<sup>2</sup> Nitrogen Loading Limit in accordance with Attachment B, Page 3 of the Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABA Associates, Inc. dated December 7, 2010.

#### F. SCHEDULE OF COMPLIANCE

1. The Permittee shall submit the information necessary and/or complete the following requirements for proper compliant operation of the spray irrigation system:
  - a. Effluent Total Nitrogen concentration:
    - i. By October 31, 2017, the Permittee must return Mountaire Farms of Delaware, Inc.'s effluent Total Nitrogen concentration to within 25% of the design value of 15.6 mg/L in accordance with the Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABB Associates, Inc. dated December 7, 2010.
    - ii. By August 31, 2017, the Permittee must submit to the Groundwater Discharges Section a Plan of Corrective Action. The Plan must include proposed efforts to investigate the cause of the elevated Total Nitrogen concentration in the effluent, proposed modifications to the system, and a timeline for implementing proposed modifications.
2. The Permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance by specified date. In the event of noncompliance, the notice shall include the cause of noncompliance, any remedial action taken, and the probability of meeting the next scheduled requirement.

#### G. BUFFER REQUIREMENTS

Buffer zones must be maintained in accordance with Section 6.3.2.3.10 of the Regulations unless otherwise specified below.

1. A buffer zone of at least 50 feet shall be maintained between the edge of the wetted field area and all highways, individual lots and property lines.
2. A buffer zone of 50 feet shall be maintained between the wetted edge of the spray field and the edge of any wetlands or any perennial lake or stream provided that the buffer zone is maintained in perennial vegetation, otherwise a buffer zone of 100 feet shall be maintained.
3. Spray irrigation of wastewater in the reduced buffer areas along Route #24 and County Road 304 shall only occur during daylight hours.

#### H. SLUDGE HANDLING REQUIREMENTS

In accordance with AGU 1402-5-03 and AGU 1403-5-03 issued by DNREC's Surface Water Discharges Section (302) 739-9946.

#### I. FACILITY SPECIFIC CONDITIONS

1. Spray irrigation is prohibited when saturated or frozen soil conditions exist, except on fields identified by the Department as "wet weather irrigation fields." No runoff of wastewater from the spray fields may enter adjacent properties, tax ditches or other water bodies. Pivot #'s CBS# 3, 3B, 3C, 3D east, 3D west (except for a portion of CBS# 3 which is adjacent to Indian River) and WHBJ 1, 2, 3 and 4 (except for portions of the WHBJ 3 and 4 spray areas along the ditch that runs west to east along these systems) have been designated as "wet weather irrigation fields."
2. If down-gradient water supply wells (public or private) are contaminated by the wastewater spray irrigation process, the permittee shall provide a free, alternative potable water supply to the affected parties.
3. The permittee shall track the wind direction to ensure that no spray drift occurs to roadways during irrigation. If wind conditions are such that spray drift could occur over roadways, then all spray irrigation activities shall cease in those fields.

DEN Number: 359191-04  
Effective Date: July 31, 2017  
Expiration Date: July 30, 2022  
Page 10 of 26

4. The irrigation pump station shall be kept free from accumulated solids, debris or sludge deposits.
5. Use of the spray irrigation system for the application of pesticide products shall be conducted in accordance with approved standards for sprinkler chemigation.
6. Commercial phosphorus fertilizer applications should be limited to starter fertilizer for corn if soils tests show that it is necessary (per Jan 2015 CMR - Soils Recommendations page 9).

## PART II

### A. MONITORING REQUIREMENTS

During the period beginning on the effective date and lasting through the expiration date of this permit, the Permittee is authorized to discharge to spray irrigation fields identified on page 1, in Part I.A, and depicted on page 3 of this permit. Such discharge shall be monitored by the Permittee as specified herein.

Requests for monitoring modifications must be submitted to the Department's Groundwater Discharges Section in writing. Such requests must clearly state the reason for and nature of the proposed modification and, where applicable, must contain supporting scientific information, analysis, and justification. Requests will be addressed by the Department on a case by case basis.

Permittee shall initiate periodic reporting required under Part II.B.2 upon initiation of irrigation activities for all of the following monitoring requirements.

#### 1. INFLUENT MONITORING REQUIREMENTS

Permittee shall sample combined flows resulting into the following two influent streams:

- a. From anaerobic lagoon #1 going to the oxidation ditch; and
- b. From anaerobic lagoon #2 going to the MLE.

Permittee shall submit spreadsheet summarizing combined flows resulting in the two influent streams with the Monthly DMR.

Parameter	Unit of Measurement	Monitoring Frequency	Sample Type
Flow	Gallons/Day	Continuous	Recorded
BOD <sub>5</sub>	mg/L	Monthly	Grab
TSS	mg/L	Monthly	Grab
Total Nitrogen	mg/L	Monthly	Grab
Ammonia Nitrogen	mg/L	Monthly	Grab
Nitrate/Nitrite as Nitrogen	mg/L	Monthly	Grab
pH	S.U.	Monthly	Grab
Total Phosphorus	mg/L	Monthly	Grab
Chloride	mg/L	Monthly	Grab

**2. SPRAYED EFFLUENT MONITORING REQUIREMENTS**

Samples taken in compliance with the monitoring requirements for Fecal Coliform, Oil and Grease, Total Dissolved Solids and Total Residual Chlorine shall be collected at the spray irrigation pivot. Samples taken in compliance with the monitoring requirements for pH and all composite sampling shall be at the effluent end of the clarifier.

<b>Parameter</b>	<b>Unit Measurement</b>	<b>Monitoring Frequency</b>	<b>Sample Type</b>
Ammonia Nitrogen	mg/L	Monthly	Composite
BOD <sub>5</sub>	mg/L	Twice per month	Composite
Cadmium	mg/L	Annually	Composite
Calcium	mg/L	Annually	Composite
Chloride	mg/L	Quarterly	Composite
Copper	mg/L	Annually	Composite
Effluent Flow	Gal/day	Continuous	Recorded
Fecal Coliform	Col/100 ml	Twice per month	Grab
Lead	mg/L	Annually	Composite
Magnesium	mg/L	Annually	Composite
Nickel	mg/L	Annually	Composite
Nitrate + Nitrite Nitrogen	mg/L	Monthly	Composite
Oil and Grease	mg/L	Monthly	Grab
Organic Nitrogen	mg/L	Monthly	Calculation
pH	S.U.	Daily	Grab
Potassium	mg/L	Quarterly	Composite
Sodium Adsorption Ratio	N/A	Quarterly	Calculation
Sodium	mg/L	Quarterly	Composite
Total Dissolved Solids	mg/L	Quarterly	Grab
Total Nitrogen	mg/L	Monthly	Composite
Total Nitrogen Loading	lbs/acre	Monthly	Calculation
Total Phosphorus	mg/L	Monthly	Composite
Total Phosphorus Loading	lbs/acre	Monthly	Calculation
Total Residual Chlorine	mg/L	Daily	Grab
Total Suspended Solids	mg/L	Twice per month	Composite
Zinc	mg/L	Annually	Composite

## 3. GROUNDWATER MONITORING REQUIREMENTS

Groundwater samples shall be taken from each monitoring well for the facility. Groundwater monitoring well locations are depicted on the Site Map found on Page 3 of this Permit.

Samples taken in compliance with the monitoring requirements specified shall be taken at each monitoring well in accordance with procedures approved by the Department and listed in the State of Delaware, Field Manual for Groundwater Sampling (Custer, 1988).

Groundwater monitoring results for each monitoring well shall be reported using the State of Delaware Well Identification Tag Number that is required on all wells in accordance with the Delaware Regulations Governing the Construction and Use of Wells, Section 10, A.

All field sampling logs and laboratory results for samples obtained from a well shall be identified by the DNREC ID affixed to the well.

Groundwater samples shall be tested from the following wells for the following parameters:

Local ID	DNREC ID	Field	Local ID	DNREC ID	Field
MW-13	243364	WHBJ-5	MW-31	70662	WHBJ-7
MW-14	243361	WHBJ-4	MW-32	70663	WHBJ-7
MW-15	243359	WHBJ-4/5	MW-33	70664	WHBJ-7
MW-16	243358	WHBJ-1	MW-34	70665	WHBJ-3
MW-17	243357	WHBJ-4/7	MW-35	70666	WHBJ-2
MW-18	243356	WHBJ-3	MW-36	70667	CB-3DW
					CB-
MW-19	243355	WHBJ-2	MW-37	70668	3B/C/D
MW-20	243354	WHBJ-2	MW-38	192056	CB-3DW
MW-21	243353	WHBJ-2	MW-40	70671	WHBJ-1
					CB-
MW-22	243362	WHBJ-4	MW-41	70672	3/B/C
MW-23	243365	CB-3/B/C	MW-42	70673	CB-3C
MW-25	243351	Next to 15	MW-43	70674	CB-3
MW-26	243363	WHBJ-4	MW-44	70675	CB-3
MW-27	243352	WHBJ-7	MW-45	70676	CB-3/3A
MW-28	70659	WHBJ-6	MW-46	70677	CB-3A
MW-29	70660	WHBJ-6	MW-47	70678	CB-3A
MW-30	70661	WHBJ-6			

DEN Number: 359191-04  
 Effective Date: July 31, 2017  
 Expiration Date: July 30, 2022  
 Page 14 of 26

## GROUNDWATER MONITORING REQUIREMENTS (con't)

Parameter	Unit Measurement	Measurement Frequency	Sample Type
Ammonia as Nitrogen	mg/L	Quarterly	Grab
Arsenic	mg/L	Quarterly	Grab
Chloride	mg/L	Quarterly	Grab
	hundredths of		
Depth to Water	a foot	Quarterly	Field Test
Dissolved Oxygen	mg/L	Quarterly	Field Test
Fecal Coliform	Col/100mL	Quarterly	Grab
Nitrate + Nitrite as Nitrogen	mg/L	Quarterly	Grab
pH	S.U.	Quarterly	Field Test
Sodium	mg/L	Quarterly	Grab
Specific			
Conductance	µS/cm	Quarterly	Field Test
Temperature	°C	Quarterly	Field Test
Total Dissolved Solids	mg/L	Quarterly	Grab
Total Nitrogen	mg/L	Quarterly	Grab
Total Phosphorus	mg/L	Quarterly	Grab

DEN Number: 359191-04  
 Effective Date: July 31, 2017  
 Expiration Date: July 30, 2022  
 Page 15 of 26

#### 4. GROUNDWATER TABLE ELEVATION MONITORING REQUIREMENTS

N/A

#### 5. LYSIMETER MONITORING REQUIREMENTS

Samples shall be taken from each lysimeter for the facility. Lysimeter locations are depicted on the Site Map found on Page 3 of this Permit.

Samples must be tested from the following wells for the following parameters. The constituents are listed below in highest priority first. In the event that sufficient sample volume may not be obtained to test for all parameters listed, the sample shall be tested for as many constituents possible in the following order:

Local ID	DNREC ID	Associated Pivot	Notes
LY-1	257012	CB-3	Replaced well 233818 on 2/7/2017
LY-2	257636	CB-3C	Replaced well 233819 on 3/29/2017
LY-3	257016	CB-3DW	Replaced well 233820 on 2/7/2017
LY-4	233821	WHBJ-1	
LY-5	233822	WHBJ-3	
LY-6	233823	WHBJ-7	
LY-7	233824	WHBJ-6	

Parameter	Unit Measurement	Measurement Frequency	Sample Type
Total Nitrogen	mg/L	Quarterly	Grab
Total Phosphorus	mg/L	Quarterly	Grab
Nitrate + Nitrite as Nitrogen	mg/L	Quarterly	Grab
Ammonia as Nitrogen	mg/L	Quarterly	Grab
Chloride	mg/L	Quarterly	Grab
Sodium	mg/L	Quarterly	Grab
Total Dissolved Solids	mg/L	Quarterly	Grab
pH	S.U.	Quarterly	Field Test
Specific Conductance	µS/cm	Quarterly	Field Test
Temperature	°C	Quarterly	Field Test



## 6. SOIL MONITORING REQUIREMENTS

Composite soil samples representing each soil series within the wetted spray field shall be taken separately from both soil depths of 0–12 inches and 12–24 inches. A minimum of one composite sample for each of the both aforementioned depths is required for every 20 acres of each soil series. The composite soil sampling must represent the average conditions in the sampled body of material. The discrete samples that are to be composited must be collected from the same soil horizon and depth interval.

Soil sample locations shall be plotted on a scaled drawing and labeled consistent with the sample nomenclature. Each field must also be identified so that sample results may be tracked and properly assessed for field life limiting factors.

Soil chemical testing should be in accordance with Methods of Soil Analysis published by the American Society of Agronomy, Madison, Wisconsin.

If a Compliance Monitoring Report (CMR) is required for the facility, testing for Cadmium, Nickel, Lead, Zinc and Copper should be performed approximately one year prior to permit renewal so results may be utilized by the Permittee in the CMR. Reference Part IV.A.2 of the Permit and Section 6.5.4 of the Regulations regarding CMR requirements.

Parameter	Unit Measurement	Measurement Frequency	Sample Type
pH	S.U.	Annually	Soil Composite
Organic Matter	%	Annually	Soil Composite
Phosphorus (as P <sub>2</sub> O <sub>5</sub> )	mg/kg	Annually	Soil Composite
Potassium	mg/kg	Annually	Soil Composite
Sodium Adsorption Ratio	meq/100g	Annually	Soil Composite
Arsenic	mg/kg	Once per 5 years	Soil Composite
Cadmium	mg/kg	Once per 5 years	Soil Composite
Nickel	mg/kg	Once per 5 years	Soil Composite
Lead	mg/kg	Once per 5 years	Soil Composite
Zinc	mg/kg	Once per 5 years	Soil Composite
Copper	mg/kg	Once per 5 years	Soil Composite
Cation Exchange Capacity	meq/100g	*Only if soil pH changes significantly	Soil Composite
Phosphorus Adsorption (Mehlich 3 acceptable)	meq/100g	**Only if soil phosphorus levels become excessive for plant growth	Soil Composite
Percent Base Saturation	%	*Only if soil pH changes significantly	Soil Composite

\*A significant change in soil pH is defined as a change of one or more standard units from the original value established in the Design Development Report.

\*\* Excessive levels of soil phosphorus are defined by the Delaware Nutrient Management Commission. Soil phosphorus levels must be tested in accordance with the University of Delaware soil testing methods (Gartley, 2002). If the soil phosphorus levels become excessive, the Permittee must perform a Phosphorus Site Index (PSI) study. The results must be submitted to the Groundwater Discharges Section within 30 days of completion. Based on these, the Groundwater Discharges Section may require the Permittee to submit a plan for detailing steps to reduce the phosphorus loading rates at the site.

DEN Number: 359191-04  
 Effective Date: July 31, 2017  
 Expiration Date: July 30, 2022  
 Page 17 of 26

## 7. VEGETATION MONITORING

In the year prior to permit expiration, a minimum of one composite sample for each field is required upon each harvest. If a crop rotation is utilized either in alternate years or in the same year, the aforementioned requirement must be duplicated for each crop type. If a Compliance Monitoring Report (CMR) is required for the facility, testing should be performed approximately one year prior to permit renewal so results may be utilized by the Permittee in the CMR. Reference Part IV.A.2 of the Permit and Section 6.5.4 of the Regulations regarding CMR requirements.

Parameter	Unit Measurement	Measurement Frequency	Sample Type
Yield	Bushels/acre and lbs/acre	Per harvest	Vegetation Composite
Nitrogen	% and lbs/acre	Per harvest	Vegetation Composite
Phosphorus	% and lbs/acre	Per harvest	Vegetation Composite
% Moisture	%	Per harvest	Vegetation Composite

## 8. OPERATIONS MONITORING REQUIREMENTS

### a. Spray Field Applications

Parameter	Unit Measurement	Monitoring Frequency	Sample Type
Fertilizer	lbs/acre per	Monthly	Reported
Nitrogen	field/zone/pivot		
Fertilizer	lbs/acre per	Monthly	Reported
Phosphorus	field/zone/pivot		

### b. Treatment System

Parameter	Sample Location	Unit Measurement	Monitoring Frequency	Sample Type
Lagoon Levels	Lagoons	Feet of depth of lagoon	Weekly	Field Test

## 9. SURFACE WATER MONITORING REQUIREMENTS

N/A

DEN Number: 359191-04  
Effective Date: July 31, 2017  
Expiration Date: July 30, 2022  
Page 18 of 26

## B. MONITORING SPECIFICATIONS AND REPORTING REQUIREMENTS

### 1. Representative Sampling

Samples and measurements taken as required in the operation permit shall be representative of the volume and nature of the monitored discharge. If there has been significant increase ( $> 25\%$ ) in the characterization of any one parameter of the effluent wastewater as established in the Design Engineer Report, the permittee shall resample the wastewater and submit the additional analyses to the Department. The permittee shall re-characterize the wastewater to determine if a change in treatment is required and/or if the land limiting constituent has changed. If a change in treatment is required and/or if the land limiting constituent has changed, a revised Design Engineer Report shall be submitted to the Department. After a review of these results, the Department may invoke the provisions of Part V.A.1 of this permit.

### 2. Reporting

Monitoring results obtained during the previous one month/quarter shall be summarized and reported on an approved monitoring report form(s) postmarked no later than the 28th day of the month following the completed reporting period. Laboratory analytical results and sampling logs must be submitted with the corresponding month's monitoring report. Signed reports/forms, laboratory analytical results, laboratory sampling logs and field data sheets shall be submitted in one complete package to the Department at the following address:

Groundwater Discharges Section  
Division of Water  
Department of Natural Resources and Environmental Control  
89 Kings Hwy  
Dover DE 19901  
(302) 739-9948 Office  
(302) 542-9735 Cell

3. Monitoring results reported as less than the detectible limit should be reported with the less than symbol "<" before the detection limit. The full detection limit value must be utilized in any necessary calculations. The less than symbol must be carried through the calculation. The resulting value must include any appropriate less than or greater than symbol resulting from the calculation.

### 4. Additional Monitoring by Permittee

If the permittee monitors any parameter at the location(s) designated herein more frequently than required, using approved analytical methods, the results shall be reported to the Department on an approved monitoring report form. Such increased frequency shall also be indicated.

### 5. Annual Report

The Permittee shall submit to the Department's Groundwater Discharges an Annual Report summarizing the operations, management, administration and maintenance of the facility for the calendar year. The Annual Report must be submitted to the Department's Groundwater Discharges on or before February 28th of each year. The Annual Report must include all applicable items found in Section 6.8.2.4.1.3 and Section 6.9 of the Regulations.

### 6. Test Procedures

Test procedures for analysis of pollutants shall conform to the applicable test procedures identified in 40 CFR, Part 136 or the most recently adopted copy of Standard Methods unless otherwise specified in this permit.

DEN Number: 359191-04  
Effective Date: July 31, 2017  
Expiration Date: July 30, 2022  
Page 19 of 26

7. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:

- a. The exact place, date and time of sampling and/or measurement;
- b. The person(s) who performed the sampling and/or measurement;
- c. The date(s) the analyses were performed and the time the analyses were begun;
- d. The person(s) who performed the analyses; and
- e. The results of each analysis.

8. Records Retention

All records and information resulting from the monitoring activities required by this permit or the Regulations including all records of performed analyses, calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation shall be retained for five years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee or as requested by the Department.

9. Availability of Reports

All reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Natural Resources and Environmental Control. Monitoring data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in 7 Del. C., §6013.

10. Operator Log

An operator log must be kept on site at all times. Each spray system section shall be numbered and referred to by number in the operator log. All records and reports shall also be kept in a bound log book on site at all times and must be made available upon request for review by the Department. This log shall, at a minimum, include the applicable items listed in Section 6.7.3 of the Regulations.

11. Quality Assurance Practices

The Permittee is required to show the validity of all monitoring data by requiring its laboratory to adhere to quality assurance practices in accordance with Section 6.8.2.4 of the Regulations.

## PART III

## A. OPERATIONAL REQUIREMENTS

## 1. Groundwater Requirements

Operation of the wastewater treatment facility and spray irrigation system shall not cause the quality of Delaware's groundwater resources to be in violation of applicable Federal or State Drinking Water Standards on an average annual basis.

## 2. Facilities Operation

The Permittee must properly maintain and operate all structures, pipelines, systems and equipment for collection, treatment control and monitoring which are used by the permittee to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes, but is not limited to, effective performance based on designed facility removals; adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures.

## 3. The spray irrigation fields shall be managed to assure at a minimum that:

- a. Spray irrigation of wastewater shall only occur on fields being prepared for planting or already planted with a crop and shall not occur on fields with crops not actively growing or on voluntary vegetation.
- b. The spray fields shall be maintained in such a manner as to prevent wastewater pooling and/or discharge of wastewater to any surface waters. Should pooled areas become evident, spraying on those areas shall be prohibited until saturated conditions no longer exist.
- c. Aerosols or nuisance odors shall not extend beyond the boundary of the spray irrigation site when treated wastewater is being applied. If odors are produced that are considered to be a public nuisance, the Permittee shall take the necessary steps to eliminate such odors. All action taken shall be reported to the Department in accordance with Part IV.A.4 of this permit.
- d. Erosion controls must be employed to prevent wastewater runoff from the spray irrigation fields. The Permittee must notify the Department immediately if any wastewater runoff occurs.
- e. The spray irrigation field's crops must be maintained in optimal condition, including any necessary weed management, reseeding, or other vegetative management practices.
- f. Effective vegetative management shall be provided such that crops harvested on the spray irrigation sites are removed from the sites.
- g. Forage crops must be harvested and removed from the irrigation field(s) at least twice a year. Crops harvested must be removed from the irrigation site within six (6) months of harvest.
- h. The wastewater must be applied in a manner such that the application is even and uniform over the irrigation area.

## 4. Spray irrigation is prohibited when saturated or frozen soil conditions exist except on fields identified in Part I.I.1.

## 5. The groundwater mound created by the added infiltration shall at no time reach within two feet of the ground surface in any section of the spray irrigation fields. Should the groundwater mound exceed this limit, the Permittee shall cease all irrigation of wastewater to the affected fields until the groundwater mound recedes to acceptable levels.

## 6. Connections or additions to the spray irrigation system other than those indicated on the approved plans are prohibited without prior approval from the Department's Groundwater Discharges Section.

DEN Number: 359191-04  
Effective Date: July 31, 2017  
Expiration Date: July 30, 2022  
Page 21 of 26

7. Roof downspouts, foundation drains, area drains, storm sewers, combined sewers or appurtenances thereto or any sewer or device carrying storm water shall not be connected to the spray irrigation system.
8. The Permittee shall take appropriate measures to protect the spray irrigation system from damage due to sub-freezing conditions.
9. Any leaks shall be reported to the Department and repaired immediately.
10. Signs
  - a. Limited Public Access: Signs must be posted on all limited public access spray fields utilized to irrigate treated wastewater to prohibit public contact. The signs must indicate that the water being irrigated is treated wastewater. The signs must be legible. Limited public access sites must have signs posted on the perimeter every 1,000 feet, at a minimum, and at all entry points. Unlimited public access sites must have signs posted at all entry points.
  - b. Unlimited Public Access: Unlimited public access sites must have advisory signs posted at all entry points that indicate the site is spray irrigated with treated wastewater. Verbiage should include the following wording: "RECYCLED WASTEWATER – DO NOT DRINK". Alternate verbiage may be used if approved in writing by the Department.
11. Potable ground or surface water may be used for distribution system testing and irrigation to establish vegetation when sufficient treated effluent is not available.
12. Phased Systems
  - a. Once an operation permit has been issued and the wastewater flow reaches 80% of the permitted treatment capacity for the constructed phase based on a period of seven (7) consecutive days, the Permittee must submit written notification to the Department. The written notification must include a work plan for construction of the next permitted phase. The Permittee must submit a construction permit application, plans and specifications and Design Engineer Report with applicable fees if the next phase has not yet been permitted or if there are changes to the previously permitted design.
  - b. Any flow above the permitted flow for a phase shall not be allowed to be discharged to the system until construction is completed on the following phase and an operating permit has been issued or amended by the Department for the next phase.
  - c. Required documents for connecting subdivisions may be found in Section 6.5.10.3.1 of the Regulations.
13. In the event that the permittee installs new monitoring wells or replaces any existing monitoring wells, the Permittee shall submit to the Department's Groundwater Discharges Section new elevation details relative to the common benchmark previously established. Additionally, the permittee shall conduct a groundwater quality sampling program prior to initiation of wastewater disposal activities on the area incorporating the well. The sampling program shall be sufficient to establish representative groundwater quality at each well prior to initiation of the wastewater disposal activities. A minimum of three samples shall be collected at least one month apart and analyzed. A summary report detailing all analyses shall be submitted to the Department's Groundwater Discharges Section prior to initiation of wastewater disposal activities. Analyses shall include the parameters iterated in Section 6.8.1 of the Regulations.
14. The Permittee shall calibrate all flow meters in accordance with the Manufacturer's recommendations. Calibration shall include, but not be limited to influent, effluent, continuous online turbidity and chlorine residual monitors. The calibration documentation must be submitted with the Annual Report in accordance with Part II.B.5
15. The Permittee shall operate and maintain the land treatment system in accordance with the approved Operation and Maintenance Plan (O&M). A copy of the O&M must be on site at all times. The Permittee must maintain the O&M's accuracy and applicability in accordance with both their Permit and the Regulations. In the event of a discrepancy between the O&M and the Permit or Regulations, the requirements of the Permit and the Regulations would govern.

16. At least two feet of freeboard, measured vertically from the lowest point of the berm, is required for all ponds. The lowest point of the berm must be determined and marked.

The Permittee must notify the Department's Groundwater Discharges Section in writing prior to utilizing the freeboard in any lagoon or immediately upon unexpected encroachment into freeboard. In the event of encroachment into freeboard, Permittee shall contact the Groundwater Discharges Section to coordinate relief measures. In the event of an emergency, Permittee may contact the Department at the telephone numbers cited in Part II.B.2 of this permit; however, written notification must subsequently be provided within 5 days of encroachment.

17. If the facility does not treat sewage and has a storage tank that requires cleanout, and if the permittee intends to land apply material collected from the cleanout onto the spray irrigation field, the Permittee must analyze the material for nutrients and any other applicable parameters of concern as determined by the Groundwater Discharges Section Prior to tank cleanout being performed. Permittee must submit to the Groundwater Discharges Section a report including the results, the frequency and estimated volume of material to be applied, and how and where it will be applied. The report must include a mathematical analysis determining any nitrogen loading from the tank cleaning combined with nitrogen loading from wastewater application will not exceed the allowable nitrogen load.
18. Fencing is required at treatment facilities, pump stations and storage/treatment ponds. Fencing of spray fields is not required.
19. The collection and channelization of irrigated wastewater for purposes other than retreatment is prohibited.
20. Direct application of treated wastewater to drainage ditches, any water bodies, and wetlands is prohibited.
21. Emergency Repairs

Emergency repairs or the replacement of critical "like kind" components of the wastewater treatment facility necessary for the continued operation of the facility may be performed without first obtaining a construction permit from the Department.

A report must be submitted to the Department within five (5) days of completion of the emergency repairs. The report must summarize the nature of the emergency and the repairs performed. All violations must also be reported in accordance with Section 6.5.9.

22. Adverse Impact

The Permittee shall take all steps to minimize any adverse impact to the Waters of the State resulting from operation under this permit. Such steps shall include, but not be limited to, accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or mitigation of such impacts.

23. Bypassing

The diversion of flow from any portion of the treatment facility's process flow (including, but not limited to, pretreatment, storage, distribution and land application) necessary to maintain compliance with the terms and conditions of this permit is prohibited unless:

- a. The bypass is unavoidable to prevent personal injury, loss of life, severe property damage, or materially adversely affect public health and/or the environment; or
- b. There are no alternatives readily available.

The Groundwater Discharges Section must be orally notified within 24 hours after such bypass; and, a written submission regarding the bypass must be submitted within five days of the Permittee's becoming aware of the bypass. Where the need for a bypass is known (or should have been known) in advance, this notification must be submitted to the Groundwater Discharges Section for approval at least ten days prior, or as soon as possible, before the date of bypass.

The treatment facility must be repaired and restored to the permitted design operations process flow.

24. Removed Substances

Solids, sludges, filter backwash or other pollutants removed in the collection, conveyance, or treatment of wastewater shall be disposed of in a manner such as to prevent any pollutant from entering the surface water or groundwater and to comply with applicable federal or state laws and regulations.

25. Power Failures

An alternative power source, which is sufficient to operate the wastewater treatment and disposal facilities, shall be available. If such alternative power source is not available, the Permittee shall halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater facilities.



## PART IV

### A. MANAGEMENT REQUIREMENTS AND RESPONSIBILITIES

#### 1. Initiation of Facility Operations Notification

If this permit is for initial operations following construction, the Permittee shall notify the Department in writing within 24 hours of the initiation of operations.

#### 2. Operation Permit Re-Issuance

At least 180 days before the expiration date of this permit, the Permittee must submit an application for renewal or notify the Department of the intent to cease discharging by the expiration date. The application package for systems with a design flow  $\geq 100,000$  gpd, must include a five (5) year Compliance Monitoring Report (CMR). The CMR must be in accordance with Section 6.5.4.3 of Regulations. In the event that a timely and complete application has been submitted as determined by the Department, and the Department is unable, through no fault of the Permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable until a decision is made on the new application.

#### 3. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

Any anticipated facility expansions, production increases, or process modifications that will result in new, different, or increased discharges of pollutants must be reported in writing to the Department's Groundwater Discharges Section for approval. A new permit may be required.

Any other activity which would constitute cause for modification or revocation and reissuance of this permit as described in Part V.A.1 of this permit shall be reported to the Groundwater Discharges Section. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

#### 4. Non-compliance Notification

The Permittee shall report to the Department's Enforcement Section at (800) 662-8802 any unpermitted release or discharge of any contaminant into the air, or a pollutant, including petroleum substances, into surface waters, groundwater, or onto land as soon as the Permittee has knowledge of, or should have had knowledge of, the release or discharge.

The Permittee shall report to the Groundwater Discharges Section orally within 24 hours from the time the Permittee became aware of any noncompliance that may endanger the public health or the environment by contacting the Groundwater Discharges Section at the telephone numbers cited in Part II.B.2 of this permit.

If for any reason the Permittee does not comply with, or will be unable to comply with, any effluent limitations or other conditions specified in this permit, the Permittee shall provide the Department with the following information in writing within five days of becoming aware of any actual or potential non-compliance:

- a. A description and cause of the non-compliance with any limitation or condition;
- b. The period of non-compliance including exact dates and times; or, if not yet corrected, the anticipated time the non-compliance is expected to continue; and

- c. The steps being taken or planned to reduce, eliminate and/or prevent recurrence of the non-compliant condition.

#### 5. Facility and Construction Changes

The Permittee shall submit a written report to the Department for review and approval, of any changes to the facility or construction of the system within the following time periods:

- a. Thirty days before any planned activity, physical alteration to the permitted facility or addition to the permitted facility if that activity, alteration or addition would result in a change in information that was previously submitted to the Department;
- b. Thirty days before any anticipated change which would result in noncompliance with any permit condition or the regulations; or
- b. Immediately after the Permittee becomes aware of relevant facts omitted from, or incorrect information submitted in, a permit application or report to the Department.

#### 6. Right of Entry

The permittee shall allow the Department entry and access, consistent with 7 Del.C. Ch. 60, to:

- a. Enter the permitted facility.
- b. Inspect any records that must be kept under the conditions of the permit.
- c. Inspect any facility, equipment, practice, or operation permitted or required by the permit.
- d. Sample or monitor for the purpose of assuring permit compliance of any substance or any parameter at the facility.

#### 7. Permit Transferability

Permits may be transferred to a new owner or operator. The permittee must notify the Department by requesting a change of ownership of the permit before the date of transfer. The transfer must be consistent with any notarized legal documents and/or CPCN required by the Regulations. The legal documentation must be provided with the application. The application must be received 30 days before the transfer.

- a. No person shall transfer a permit from one (1) person to another unless 30 days written notice is given to the Department, indicating the transfer is agreeable to both persons, and approval of such transfer is obtained in writing from the Department, and any conditions of the approval of such transfer is obtained in writing from the Department, and any conditions of the transfer approved by the Department are complied with by the transferor and the transferee.
- b. The notice to the Department shall contain a written agreement between the transferor and the transferee, indicating the specific date of proposed transfer of permit coverage and acknowledging responsibilities of current and new permittees for compliance with and liability for the terms and conditions of this permit. The notice shall be signed by both the transferor and the transferee.

## PART V

## A. PROVISIONS

## 1. Permit Revocation

The Department may revoke a permit if, among other things, the permittee violates any permit condition, these regulations, fails to pay applicable Departmental fees, obtains the permit by misrepresentation or fails to fully disclose all relevant facts.

Except in cases of emergency, the Department shall issue a written notice of intent to revoke to the permittee prior to final revocation. Revocation shall become final within 20 days of receipt of the notice by the permittee, unless within that time the permittee requests an administrative hearing in writing.

The Department shall notify the permittee in writing of any revocation hearing at least 20 days prior to the date set for such hearing.

If the Department finds the public health, safety or welfare requires emergency action, the Department shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing, the Department shall provide the permittee a revocation hearing.

## 2. Permit Modifications/Amendments

In consultation with the permittee, the Department may modify or amend an existing permit provided that the modifications would not result in an increased impact or risk to the environment or to public health.

## 3. State Laws

This permit shall not be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

## 4. Property Rights

The issuance of this permit does not convey any property rights of either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

## 5. Severability

The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit, to any circumstances is held invalid; the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

## 6. This permit does not relieve the Permittee of complying with any applicable Federal, State or local regulations.

7. In the event that the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems or applicable federal regulations are revised, this permit may be opened and modified accordingly after notice and opportunity for a public hearing.

## 8. This permit supersedes all previous spray irrigation operation permits issued to the Permittee.

**EXHIBIT B**  
**LAND APPLICATION PERMIT**



AUTHORIZATION TO OPERATE A LAND TREATMENT SYSTEM  
FOR THE  
AGRICULTURAL UTILIZATION OF SLUDGE

1. Pursuant to the provisions of 7 Del. C., §6003

Mountaire Farms of Delaware, Inc.  
P.O. Box 1320  
Millsboro, Delaware 19966

is hereby granted a permit to operate a land treatment system for: the agricultural utilization of sludge, dissolved air floatation (DAF) solids, anaerobic lagoon crust generated at the Mountaire Farms of Delaware, Inc., Millsboro, Delaware, Wastewater Treatment Facility; and DAF solids generated at the Mountaire, Selbyville, Delaware Wastewater Treatment Facility. This permit is limited to the application of stabilized sludge (anaerobic lagoon crust included herein as sludge except where noted otherwise) and DAF solids from the above referenced Wastewater Treatment Facilities at agronomic rates to the site(s) designated below:

- A) Approximately 70 acres known as the Al Rust Farm;
- B) Approximately 117 acres known as the Thorogood Farm;
- C) Approximately 68 acres of land contained within a 272 acre parcel known as the Frame Farm;
- D) Approximately 84 acres known as the Virginia Cordrey Farm.

All sites are located near the town of Millsboro, Sussex County, Delaware. (See pages 2-5 for location details.)

2. The application rates, monitoring requirements and other permit conditions are set forth in Parts I, II and III hereof.

*Bryan A. Ashby*

Bryan A. Ashby, Program Manager  
Surface Water Discharges Section  
Division of Water  
Department of Natural Resources  
and Environmental Control

*5/30/14*

Date Signed

## **Part I**

### **GENERAL DESCRIPTION OF OPERATION**

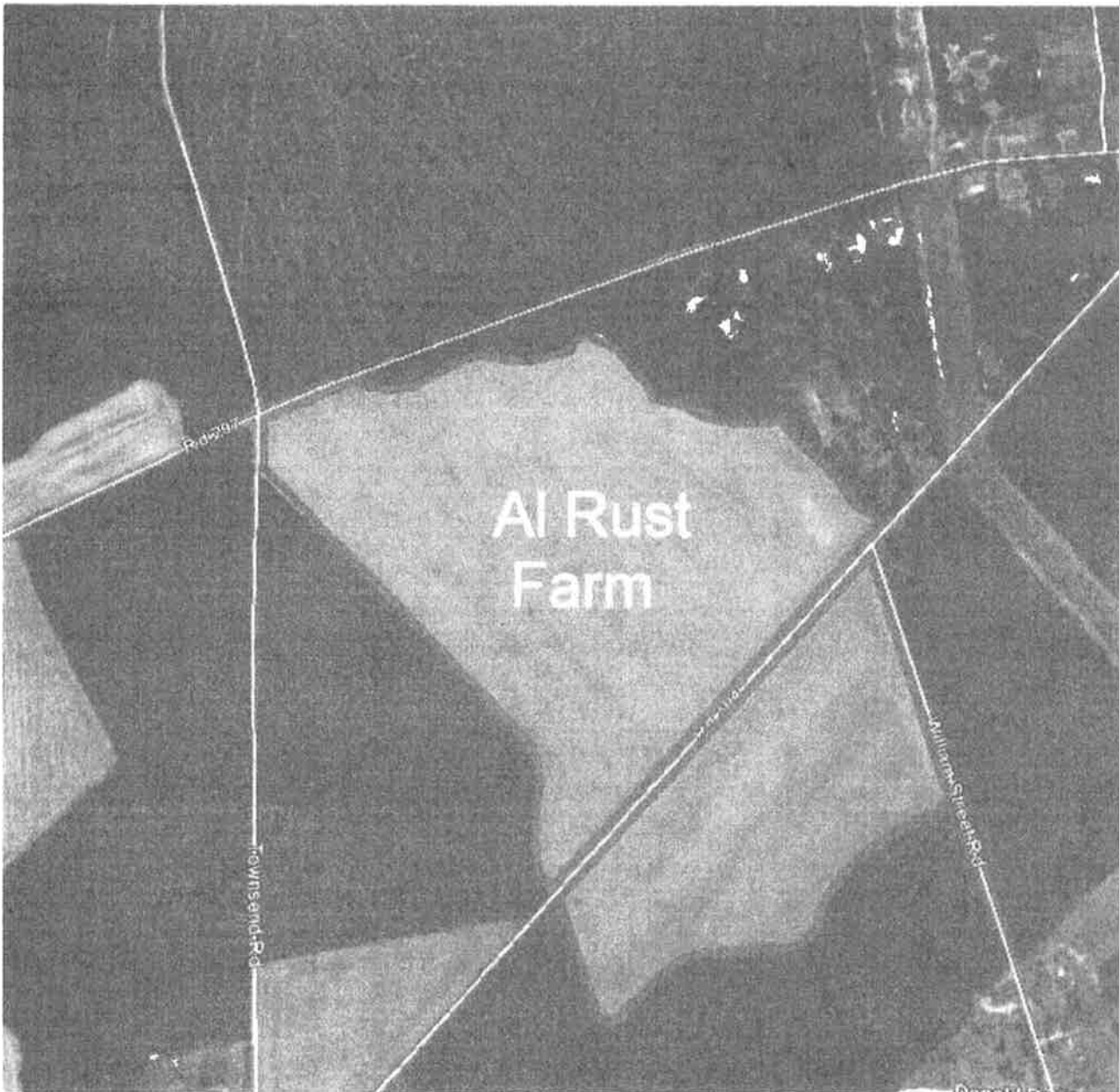
The operation involves the land application of stabilized sludge and dissolved air flotation solids (DAF) from the Mountaire Farms of Delaware Inc., Millsboro, Poultry Plant Wastewater Treatment Facility and Selbyville, Delaware Wastewater Treatment Facility, to any of the approved site locations listed below. Sludge must be stabilized in accordance with the requirements of this permit prior to application to the approved sites. Liquid sludge or float will be applied at agronomic rates by means of injection into the soil. Solid stabilized sludge (> 20% solids) may be transported by dump body or other open vehicle and surface applied. Surface applied stabilized sludge and DAF must be incorporated into the soil within 6 hours of application.

## SITE LOCATIONS:

### Al Rust Farm:

Approximately 70 acres of land bordering on the north and south sides of Sussex County Road 304 (Maryland Camp Road).

Tax parcel number: 2-34-28.00-2.00 and 2-34-28.00-3.00

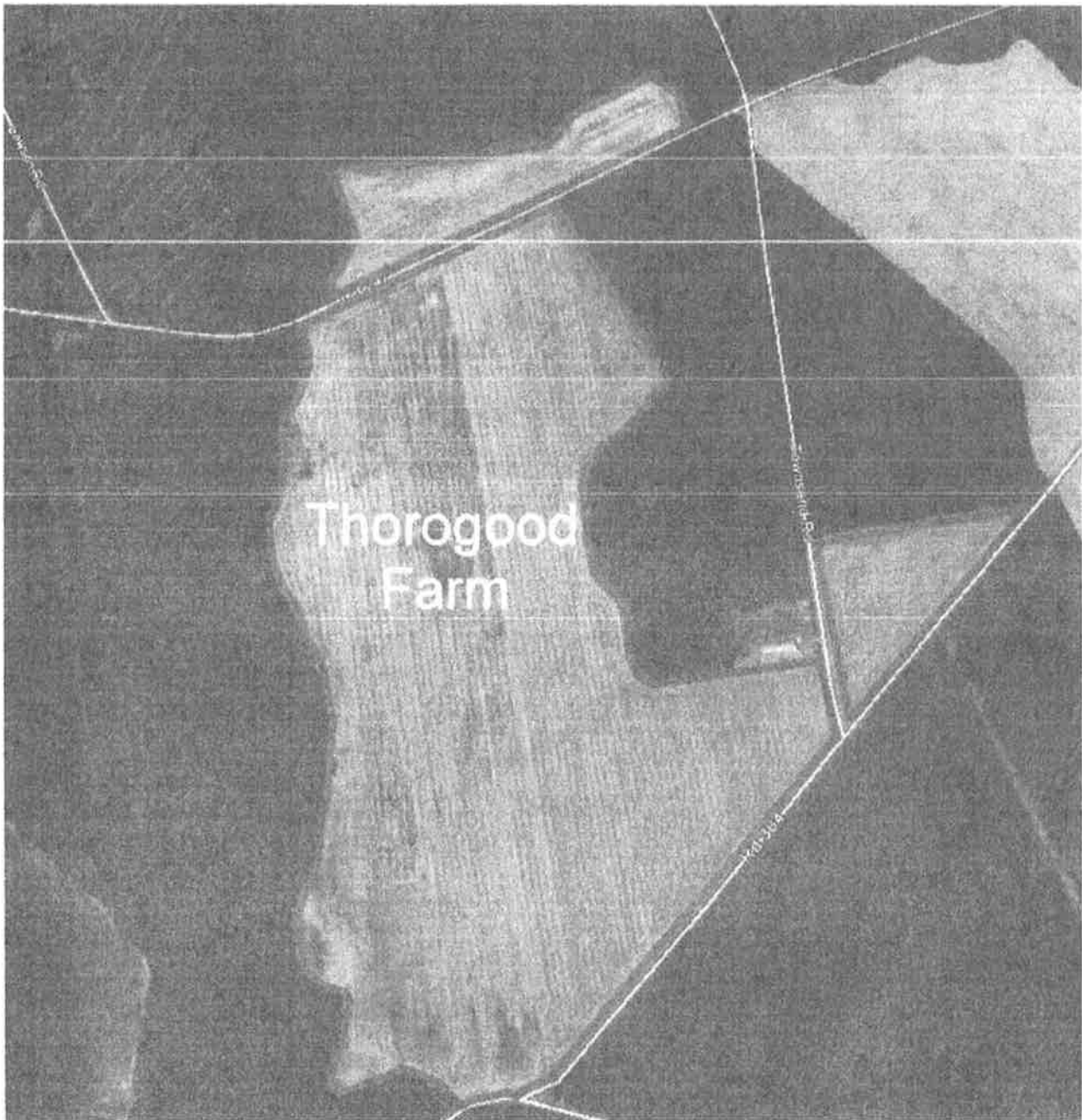


\* The north west corner of the Al Rust Farm designated as Osier soil in the PDR shall be limited to application in May through August in accordance with section 138.6 of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes and Part I A.1 of this permit.

**Thorogood Farm:**

Approximately 117 acres of land bordering on the north and south sides of Sussex County Road 297 (Mount Joy Road) and on the south by Sussex County Road 304 (Maryland Camp Road).

Tax parcel number: 2-34-28-01

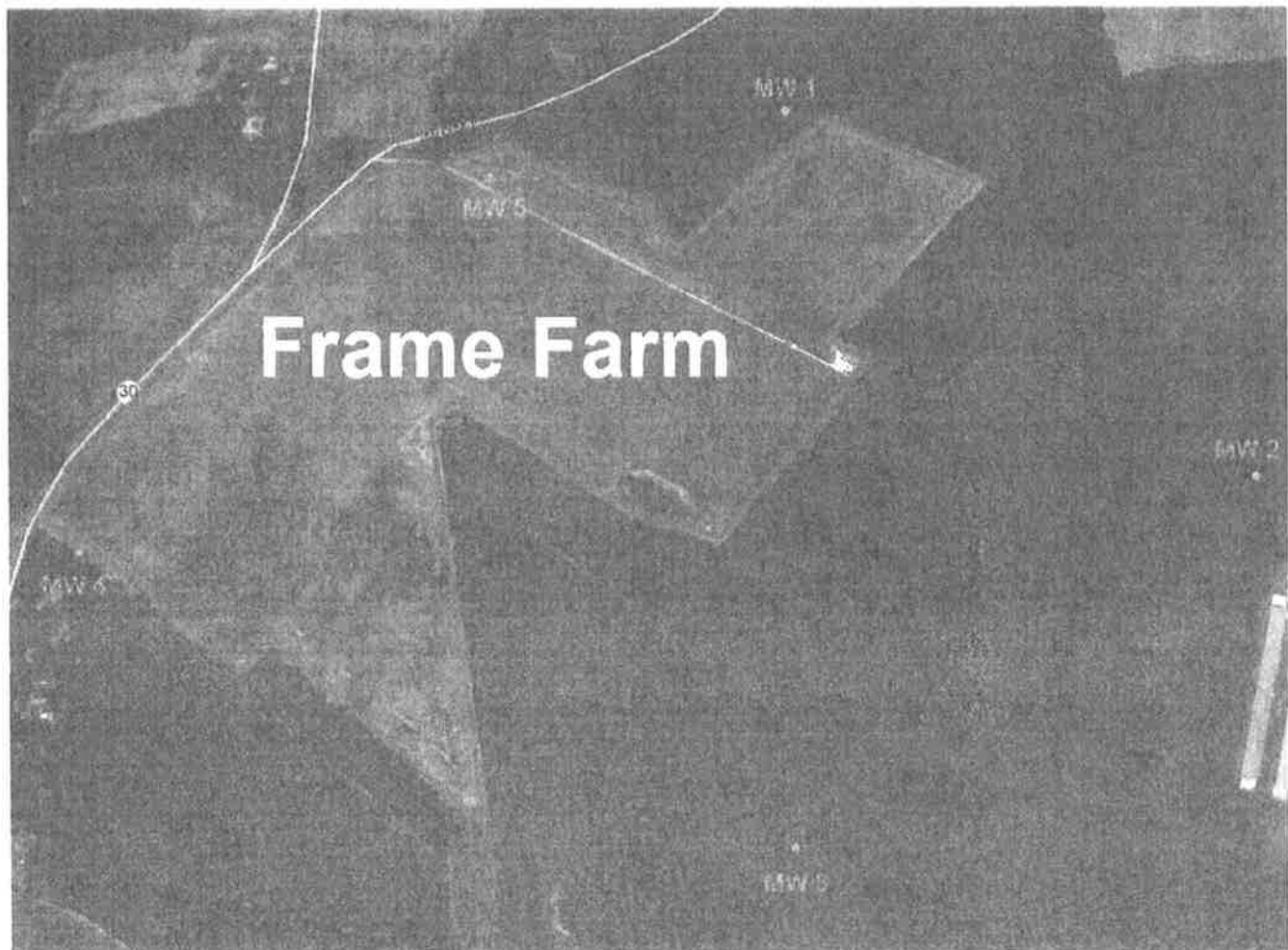




**Frame Farm:**

Approximately 68 acres of land suitable for land application within a 272 acre parcel of land lying south of Sussex County Road 314 (Doc Frame Road), east of State Route 30 and west of Sussex County Road 305 (Hollyville Road). Application to 65 acres of the forested portion of this tract is governed by State Permit AGU 1403-S-03.

Tax parcel numbers: 234-32.00-46.00, 234-27.00-18.03 and 234-27.00-19.00

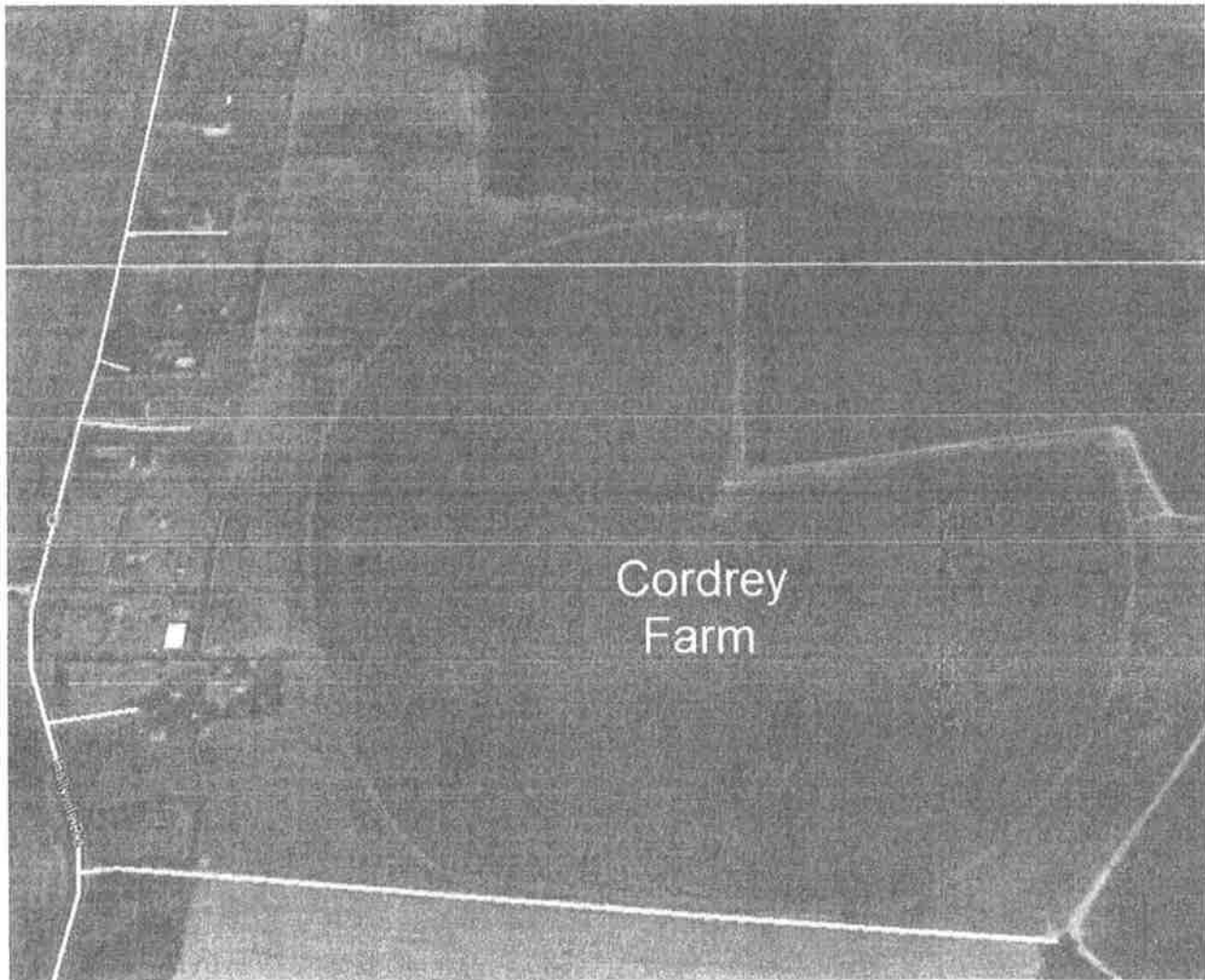


\* Portions of the Frame Farm designated as AqHw map unit in the PDR shall be limited to application from May through August in accordance with section 138.6 of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes and Part I A.1 of this permit.

Cordrey Farm:

Approximately 84 acres (approximately 48 acres irrigated and 36 acres dry land) of land suitable for land application lying on the east side of Sussex County Road 305 (Hollyville Road) and south of Sussex County Road 297 (Mount Joy Road).

Tax parcel numbers: 2-34-27.00-34.05 and 2-34-21.00-169.03



## REGULATORY AND SUPPORTING DOCUMENTS

The land treatment operation shall be conducted in accordance with the following documents:

1. The Department's Guidance and Regulations Governing the Land Treatment of Wastes; Part III, (B), the Land Treatment of Sludges and Sludge Products (as revised);
2. The letter of intent dated June 16, 1988;
3. The Land Treatment Permit Application (dated August 30, 2003), updated to include additional parcels for biosolid application;
4. The request (dated December 24, 2004) for the modification of State Permit Number AGU 0026/95 to include additional lands (the Frame Farm) for silvicultural application of biosolids;
5. Sussex County Zoning Commission Conditional Use Permit #1569 dated November 30, 2004;
6. The permit renewal package for Al Rust/Thorogood/Frame/Cordrey farms and request for the removal of Hettie Lingo/Hurdle farms from this permit dated March 26, 2007; and,
7. The revised Project Development Report (PDR) dated November 4, 2013.

## **A.1 SLUDGE AND DAF APPLICATION LIMITATIONS**

During the period beginning on the effective date and lasting through the expiration date the permittee is authorized to operate land treatment sites as identified in this permit for the application of stabilized sludge and DAF at agronomic rates. The timing of sludge and DAF application to the site, as well as the quantity and quality of sludge and DAF to be land applied is specified below:

Sludge and DAF shall be applied at a rate to meet, but not exceed, the Plant Available Nitrogen (PAN) requirement for the crop(s) grown. The PAN application rates shall also include any residual mineralized nitrogen from previous sludge and DAF application. The cropping plan and the nutrient requirement for that crop shall be submitted to the Department, prior to sludge and DAF application, for review and approval.

Supplemental additions of commercial fertilizers shall be limited to amounts necessary to meet crop needs using the written recommendations of the University of Delaware Cooperative Extension Service or a Delaware Certified Nutrient Consultant for the specified crop and anticipated yield.

When any of the limits specified above have been achieved, no additional sludge or DAF may be applied to the site unless a supplementary approval has been issued by the Department.

Fields with "high" phosphorus soil levels (greater than 150 Fiv, 150 ppm Mehlich 3, 120 ppm Bray P 1 or 75 ppm Mehlich 1) must have the phosphorus site index (PSI) calculated and the results submitted to the Department. Fields with PSI's above "low" levels (greater than 50) must submit a phosphorus management plan to the Department, for review and approval, within sixty (60) days of receipt of the soil analytical data. The phosphorus management plan must demonstrate steps that will be taken to reduce the PSI or phosphorus levels in the soil. Fields with "high" phosphorus soil levels must continue to calculate the PSI at least once every (3) three years until the phosphorus level in the soil is no longer "high". Failure to implement a phosphorous management plan, when applicable, may result in the Department invoking the provisions of Part II, B.6 of this permit.

For those portions of the sludge application area where the depth to seasonal high water table is less than twenty (20) inches but greater than twelve (12) inches, sludge application is limited to May, June, July or August. In addition, appropriate vegetation must be established and harvested prior to October 31 of the same year. Sludge shall only be applied when the actual water table depth is at least twenty (20) inches below the ground surface pursuant to Part III, (B), Subsection section 138.6 of the Guidance and Regulations Governing the Land Treatment of Wastes.

## **A.2 OTHER LIMITATIONS**

Only sludge which has been treated by a Process to Significantly Reduce Pathogens (PSRP), as defined in Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, shall be applied to any of the land treatment sites.

A sufficient amount of lime to adjust the soil pH to a value of 6.2 or above shall be applied to the site prior to sludge application.

Application is forbidden during periods of active rain or onto excessively wet ground. Periods of active rain shall be defined as more than .25 inches of rain in an hour. Sludge may not be applied when the ground surface is saturated, frozen or covered with snow or during periods of rain or runoff without written Department approval.

Sludge may not be applied from December 7 through February 15 unless the permittee receives written approval from the Department to land apply sludge during this period.

The permittee shall conform to any conditions required by Sussex County ordinance and policy in addition to the conditions contained in this permit.

The sludge shall be applied so that the application is uniform.

Fields that receive land application of wastes must have appropriate vegetation established and harvested during the growing season(s) to receive nutrient uptake credits. Fields must be planted with appropriate vegetation or a cover crop within one (1) month of completing sludge application, unless prohibited by weather conditions in which case vegetation must be established as soon as practicable.

Liquid sludge shall only be applied by means of subsurface injection into the soil. Solid Sludge (> 20% solids) may be surface applied. The permittee shall ensure that the sludge is incorporated into the soil within 6 hours of surface application.

Livestock shall not be allowed to graze for at least one (1) month after the application of sludge.

Feed and fiber crops removed from the sludge land application site shall not be harvested until thirty (30) days subsequent to application of sludge.

Crops for direct human consumption may not be harvested from the sludge application area for at least 14 months subsequent to application of the sludge. Root crops may not be harvested from the sludge application areas for at least 38 months subsequent to application of sludge.

Public access to the sludge application areas must be controlled for at least twelve (12) months after sludge application. Additionally, signage worded identical to what was submitted in the project development report (PDR) shall be posted along the perimeter of each land application field immediately before and for at least twelve (12) months after the completion of PSRP sludge land application activities.

Buffer zones established pursuant to Part III, (B), 138.2 of the Guidance and Regulations Governing the Land Treatment of Wastes shall be maintained at all times during sludge and DAF application. Additionally, buffers in accordance with Sussex County Ordinance No. 1730 shall be maintained.

No sludge or DAF shall be applied if sample analysis yields pollutant concentrations in excess of the following values:

Arsenic	75 mg/kg	Cadmium	85 mg/kg	Chromium	3000 mg/kg
Copper	4300 mg/kg	Lead	840 mg/kg	Mercury	57 mg/kg
Molybdenum	75 mg/kg	Nickel	420 mg/kg	Selenium	100 mg/kg
Zinc	7500 mg/kg	PCB	5 mg/kg		

### A.3 GROUNDWATER LIMITATIONS

Application of sludge to the designated fields shall not cause groundwater to be in violation of applicable Federal or State drinking water standards on an average annual basis. Should down-gradient water supply wells (public or private) be impacted above applicable Federal or State drinking water standards from the land application of sludge, the permittee shall be required to provide a free Department approved alternative potable water supply to the affected parties.

**B. MONITORING REQUIREMENTS**

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to apply sludge and DAF at agronomic rates to the application sites listed in this permit. Such applications shall be monitored by the permittee as specified below:

**B.1 DIGESTED SLUDGE, ANAEROBIC LAGOON CRUST, AND DAF**

Parameter	Unit Measurement	Minimum Frequency	Sample Type
Moisture Content	percent	Twice per year	Composite
Total Nitrogen as N (Moist & Dried)	percent	Twice per year	Composite
Organic Nitrogen as N (Moist & Dried)	percent	Twice per year	Composite
Ammonium and Nitrate Nitrogen as N (Moist & Dried)	percent	Twice per year	Composite
pH	S.U.	Twice per year	Composite
Volatile Solids	percent	Twice per year	Composite
Phosphorus as P (dry weight basis)	percent	Twice per year	Composite
Potassium (dry weight basis)	percent	Twice per year	Composite
Arsenic (dry weight basis)	mg/kg	Every 3 years	Composite
Cadmium (dry weight basis)	mg/kg	Every 3 years	Composite
Chromium (dry weight basis)	mg/kg	Every 3 years	Composite
Copper (dry weight basis)	mg/kg	Every 3 years	Composite
Lead (dry weight basis)	mg/kg	Every 3 years	Composite
Mercury (dry weight basis)	mg/kg	Every 3 years	Composite
Molybdenum (dry weight basis)	mg/kg	Every 3 years	Composite
Nickel (dry weight basis)	mg/kg	Every 3 years	Composite
Selenium (dry weight basis)	mg/kg	Every 3 years	Composite
Zinc (dry weight basis)	mg/kg	Every 3 years	Composite
PCB's (dry weight basis)	mg/kg	Every 3 years	Composite
Calcium (dry weight basis)	mg/kg	Twice per year#	Composite
Sodium (dry weight basis)	mg/kg	Twice per year#	Composite
Priority Pollutant Scan	-----	Every 3 years* #	Composite

Digested sludge samples shall be collected at the following location: The secondary aerobic digester.

Anaerobic lagoon crust samples shall be collected at the following location: The anaerobic lagoon from crust material that will be utilized for land application.

DAF samples shall be collected from the following location: The end of the DAF skimmer(s) in operation at each facility at least three hours after a processing shift begins.

All sludge samples shall be taken and analyzed in accordance with Part III, (B), Section 151, of the Guidance and Regulations Governing the Land Treatment of Wastes. All samples shall be representative of the material that is land applied under this permit. See Part I F. for reporting frequencies.

\* Anaerobic lagoon crust is not required to be sampled for the priority pollutant scan list.

# DAF solids are not required to be sampled for these parameters

**NOTE:** The Department may suspend the sampling requirements above in writing, for DAF and/or anaerobic crust, if the material(s) are not land applied at the land application sites in this permit. A list of the 126 priority pollutants can be found on 40 CFR, Part 423, Appendix A, 1987.

## **B.2 SLUDGE STABILIZATION PROCESS MONITORING**

Aerobically digested sludge and DAF float must meet one of the following processes to achieve PSRP requirements:

All sludge prepared for land application at the sites approved in this permit must meet the requirements in Part III, Section 133.1.1 of the Guidance and Regulations Governing the Land Treatment of Wastes. The permittee shall obtain seven samples of the sludge at the time the sludge is to be utilized for land application. The geometric mean of the density of fecal coliform in the samples shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis). No sludge shall be land applied prior to the permittee demonstrating the stabilization requirements have been achieved.

Or

It shall be demonstrated that sludge meets the time and temperature process monitoring requires as set forth in subsection 133.1.2.1 in Part III, (B) of the Guidance and Regulations Governing the Land Treatment of Wastes, on a continual basis.

NOTE: Alternative processes shall be approved in writing prior to implementation. See Part I, F for reporting requirements.

## **B.3 VECTOR ATTRACTION REDUCTION**

Vector attraction reduction must be achieved by method, subsurface injection or incorporation of surface applied sludge, from Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes. Other alternative methods for achieving vector attraction reduction found in Subsection of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, may be employed with prior written Departmental approval.



**B.4 SOIL MONITORING**

Parameter	Unit of Measurement	Minimum Frequency	Sample Type
pH	S.U.	Annually	Composite
Total Phosphorus as P (dry soil basis)	mg/kg	Annually	Composite
Potassium (dry soil basis)	mg/kg	Annually	Composite
Arsenic (dry soil basis)	mg/kg	Every 5 years*	Composite
Cadmium (dry soil basis)	mg/kg	Every 5 years*	Composite
Chromium (dry soil basis)	mg/kg	Every 5 years*	Composite
Copper (dry soil basis)	mg/kg	Every 5 years*	Composite
Lead (dry soil basis)	mg/kg	Every 5 years*	Composite
Mercury (dry soil basis)	mg/kg	Every 5 years*	Composite
Molybdenum (dry soil basis)	mg/kg	Every 5 years*	Composite
Nickel (dry soil basis)	mg/kg	Every 5 years*	Composite
Selenium (dry soil basis)	mg/kg	Every 5 years*	Composite
Zinc (dry soil basis)	mg/kg	Every 5 years*	Composite
Aluminum (dry weight basis)	mg/kg	Annually	Composite
Magnesium (dry soil basis)	mg/kg	Annually	Composite
Manganese (dry soil basis)	mg/kg	Annually	Composite
Iron (dry weight basis)	mg/kg	Annually	Composite
Sodium (dry soil basis)	mg/kg	Annually	Composite
% Organic Matter	Percent	Annually	Composite

**NOTE:** Composite soil samples representing each soil series identified within each sludge application area shall be collected. Soil chemistry testing must be in accordance with the Methods of Soil Analysis published by the American Society of Agronomy, and in accordance with Part III, (B), Section 151 of the Department's Guidance and Regulations Governing the Land Treatment of Wastes. See Part I, F. for reporting requirements.

- \* Parameters not required to be sampled if digested sludge, anaerobic lagoon crust or DAF is not applied during the "minimum frequency" periods.

The Department may modify the sampling frequency based upon review of continuing or additional analyses.

**B.5 PLANT TISSUE AND GRAIN ANALYSIS**

None is required at this time.

**B.6 GROUNDWATER MONITORING**

Parameter	Unit of Measurement	Minimum Frequency	Sample Type
Depth to Water	Hundredths of a foot	Quarterly	In-Situ
pH	S.U.	Quarterly	Field Test
Dissolved Oxygen	mg/l	Quarterly	Field Test
Specific Conductivity	UMHOS/CM	Quarterly	Field Test
Temperature	°C	Quarterly	Field Test
Total Dissolved Solids	mg/l	Quarterly	Field Test
Total Nitrogen as N	mg/l	Quarterly	Grab
Organic Nitrogen	mg/l	Quarterly	Grab
Nitrate + Nitrite Nitrogen	mg/l	Quarterly	Grab
Ammonium as N	mg/l	Quarterly	Grab
Total Phosphorus	mg/l	Quarterly	Grab
Chloride	mg/l	Quarterly	Grab
Sodium	mg/l	Quarterly	Grab
Arsenic, Total	mg/l	Every 5 Years	Grab
Cadmium, Total	mg/l	Every 5 Years	Grab
Chromium, Total	mg/l	Every 5 Years	Grab
Copper, Total	mg/l	Every 5 Years	Grab
Lead, Total	mg/l	Every 5 Years	Grab
Mercury, Total	mg/l	Every 5 Years	Grab
Molybdenum, Total	mg/l	Every 5 Years	Grab
Nickel, Total	mg/l	Every 5 Years	Grab
Selenium, Total	mg/l	Every 5 Years	Grab
Zinc, Total	mg/l	Every 5 Years	Grab
Fecal Coliform	Colonies/100ml	Annually	Grab

\* Groundwater samples shall be collected and analyzed individually from the five (5) monitoring wells at the Frame Farm and three (3) monitoring wells at the Cordrey Farm. Groundwater samples shall be taken in compliance with the monitoring requirements specified above and shall be taken at each monitoring well in accordance with procedures approved by the Department and listed in the Department's Field Manual for Groundwater Sampling (March, 1988).

\*\* Groundwater monitoring results for each monitoring well shall be reported using the State of Delaware Well Identification Tag Number that is required on all wells in accordance with the Delaware Regulations Governing the Construction and Use of Wells, Section 10, A.

### **C. SCHEDULE OF COMPLIANCE**

Within one hundred eighty (180) days of permit issuance, Mountaire Farm's of Delaware, Inc. shall submit a plan completed by, or under the supervision of, a Delaware-licensed professional geologist (PG), or a professional engineer qualified in hydrology and licensed to practice in the State of Delaware for review and approval. The plan shall include the proposed location and construction details of a network of groundwater monitoring wells sufficient to characterize groundwater beneath each agricultural utilization farm. Within six (6) months of DNREC approval of the plan or before a land application site is utilized under this permit (whichever is later), groundwater monitoring wells shall be installed, surveyed and sampled for the parameters listed in Part I, B.6 of this permit. Sample frequency shall comply with Part I, B.6 of this permit after initial sampling.

### **D. BONDING**

As a requirement for maintaining this permit, the permittee shall file with the Department a bond or other security on a form approved by the Department. The bond shall be payable to the Department and the obligation of the bond shall be conditioned upon the fulfillment of all requirements related to this permit. Liability under the bond shall remain in effect until the expiration date of this permit. A bond in the amount of \$55,000 shall be executed by the applicant and by a corporate surety licensed to do business in this State. Instead of having a bond executed by a corporated surety, the applicant may elect to deposit in an escrow account set up by the permittee, by filing copies of the escrow agreement with the Department, cash or negotiable bonds of the federal government or of this State or any other securities acceptable to the Department. The amount of the cash deposit or the market value of any securities shall be at least equal to the required sum of the bond. The Department shall receive and hold the cash or securities in trust, for the purpose for which the deposit is posted. The obligation of the applicant and of any corporate surety under the bond shall become due and payable, and all or any part of any cash or securities shall be applied to payment of the costs of properly fulfilling any requirement of the Permit if the Department has:

1. Notified the applicant and any corporate surety that the conditions of the Permit have not been fulfilled, and specified in the notice the particular deficiencies in the fulfillment of the permit conditions;
2. Given the applicant and any corporate surety a reasonable opportunity to correct the deficiencies and to fulfill all of the conditions of the permit; and,
3. Determined that, at the end of a reasonable length of time, some or all of the deficiencies specified in Part I, D.1, above, remain uncorrected.

### **E. MONITORING**

1. Representative Sampling:

Samples and measurements taken as required herein shall be representative of the volume and nature of the sludge to be land applied.

2. The permittee shall automatically resample the sludge and submit to the Department and landowner additional analyses if there has been a significant change (greater than 25%) in the quality of sludge. The permittee shall then be required to recharacterize the sludge in order to determine if any change in the land limiting constituent has occurred. Any change in sludge characteristics that affects the land limiting constituent shall be included in a revised Project Development Reports which shall be submitted to the Department. After a review of these results, the Department may invoke the provisions of Part II, B.6 of this permit.

3. Recording of Results:

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a) The exact place, date and time of sampling and/or measurement;
- b) The person(s) who performed the sampling and/or measurement;
- c) The dates the analyses were performed and the time the analyses were begun;
- d) The person(s) who performed the analyses;
- e) The results of each analysis.

4. Records Retention:

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation shall be retained for five (5) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

## **F. REPORTING**

1. The permittee shall submit to the Department and landowner an annual operation report on or before February 1 of each year. The annual report shall be in a format acceptable to the Department. The annual operation report shall include the following:
  - a) The daily operational record (as specified in Part II, A.1);
  - b) The weight (wet and dry tons) and volume of sludge utilized at the land application site;
  - c) Any changes in ownership of the land where the operation is conducted or any change in any lease agreement for the use of such land that may affect or alter the operator's rights upon such land;
  - d) A chemical analysis of soil from each field for the constituents identified in Part I, B.4. The results shall be compared to the original soils data submitted as a part of the Project Development Report. The procedure for soil analysis shall be consistent with Department guidance.
  - e) A site map of the same scale and contour interval as the map submitted with the Project Development Report, showing the boundaries within the field where sludge has been applied during the previous year;
  - f) For each site, the cropping scheme followed during the previous year and anticipated for the coming year; Crop yield data and an explanation of which portions of the plants were harvested; identification of fields to be used during the coming year; sludge application rates for the coming year based on nitrogen mineralization calculations from previous sludge application practices;
  - g) Sludge application rate adjustments, if necessary (See Part I, A.1);
  - h) Any other information required by the Department.
2. Sludge analytical and stabilization process monitoring data obtained during the previous monitoring period shall be summarized for that period and postmarked no later than the 28th day of the month following the completed reporting period.

**DELAWARE DEPARTMENT OF NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL, DIVISION OF WATER, SURFACE WATER  
DISCHARGES SECTION, 89 KINGS HIGHWAY, DOVER, DELAWARE 19901,  
TELEPHONE: (302) 739 9946**

When submitting monitoring results, copies of the original laboratory sheets should be included. If more than one sample is analyzed during any month, a table showing the range of constituent concentration values shall be prepared and included with the submittal.

3. Test Procedures

Test procedures for laboratory analyses shall conform to the applicable test procedures identified in Part III, (B), Section 151 of the Department's Guidance and Regulations Governing the Land Treatment of Wastes unless otherwise specified in this permit.

**G. DEFINITIONS**

1. "Agricultural Utilization" means the application rate of wastes, sludge or sludge products which shall not exceed the nutrient needs of the crop grown on the particular soil plus the other assimilative pathways in soils (e.g. immobilization with organic material, volatilization, and leachate in compliance with drinking water standards). This term may be used interchangeably with "agronomic rate".
2. "Composite" means a series of grab samples which have been collected in a manner such that the final sample is representative of the volume and characteristics of the sludge to be land applied.
3. "Land application" means the placement of sludge, treated sludge, or any other product containing these materials within 2 feet below the surface of land used to support vegetative growth.
4. "PSRP" means process to significantly reduce pathogens.
5. "Sewage" means water carried human or animal wastes from septic tanks, water closets, residences, buildings, industrial establishments, or other places, together with such groundwater infiltration, subsurface water, admixture of industrial wastes or other wastes as may be present.
6. "Sewage sludge" means sludge which derives in whole or in part from sewage.
7. "Sludge" means the accumulated semi liquid suspension, settled solids, or dried residue of these solids that is deposited from (a) liquid waste in a municipal or industrial wastewater treatment plant, (b) surface or ground waters treated in a water treatment plant, whether or not these solids have undergone treatment.
8. "Treatment" means a process that alters modifies or changes the biological, physical, or chemical characteristics of sludge or liquid waste.
9. "Vector Attraction" is the characteristic of sewage sludge that attracts rodent, flies, mosquitoes, or other organisms capable of transporting infectious agents.

## **Part II**

### **A. MANAGEMENT REQUIREMENTS**

#### **1. Land Application of Sludge**

The permittee shall prepare and maintain an operational record for each day that sludge is applied and when any other management activities are conducted at the land application site. The daily operational record shall include the following:

- a) The date, type, and wet and dry weights of the sludge applied;
- b) The facility from which the sludge originated;
- c) A record of any major deviations from the operating plan;
- d) General daily weather conditions;
- e) The application rate for sludge;
- f) A map for each site showing the area of daily activity;
- g) A record of all actions taken to correct violations of the Delaware Environmental Protection Act and the Department's Regulations; and,
- h) Management undertaken, such as planting and harvesting of crops, fertilizers and chemicals added, frequency of irrigation, techniques used, etc.

#### **2. Change in Operation**

The application of sludge to the site authorized herein shall be consistent with the terms and conditions of this permit. The application of sludge at levels in excess of the amount necessary to provide plant available nitrogen for the crop being grown, in accordance with the limits identified in Part I, A.1, 2, and 3 of this permit, shall constitute a violation of the permit. Any anticipated facility expansion, production increase, or change in site conditions which would affect the land limiting constituent, create a new land limiting constituent, or adversely affect site conditions must be reported to the Department. Upon review of this information the, Department may invoke the provisions of Part II, B.6 of this permit.

#### **3. Noncompliance Notification**

The permittee shall report to the Department:

- a) In writing thirty (30) days before any planned physical alteration or addition to the permitted facility or activity, if that alteration or addition would result in any significant change in information that was submitted during the permit application process;

- b) In writing thirty (30) days before any anticipated change which would result in noncompliance with any permit condition or Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes;
- c) Orally within twenty four (24) hours from the time the permittee became aware of any noncompliance which may endanger the public health or the environment, at (302) 739-9946 during normal working hours, or (800) 662-8802 after normal working hours, and;
- d) In writing as soon as possible but within five (5) days of the date the permittee knows or should know of any noncompliance unless extended by the Department.

This report shall contain:

- 1) A description of the noncompliance and its cause;
  - 2) The period of noncompliance including to the extent possible, times and dates and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
  - 3) Steps taken or planned to reduce or eliminate reoccurrence of the noncompliance.
- e) In writing as soon as possible after the permittee becomes aware of relevant facts not submitted or incorrect information submitted, in a permit application or any report to the Department. Those facts or the correct information shall be included as a part of this report.

#### 4. Minimize Impacts

The permittee shall take all necessary actions to eliminate and correct any adverse impact on the public health or the environment resulting from permit noncompliance.



## **B. RESPONSIBILITIES**

### **1. Renewal Responsibilities**

At least one hundred eighty (180) days before the expiration date of this permit, the permittee shall submit a new application for a permit or notify the Department of the intent to cease operation by the expiration date. In the event that a timely and sufficient reapplication has been submitted and the Department is unable, through no fault of the permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable.

### **2. Entry and Access**

The permittee shall allow the Department, consistent with 7 Del. C., Chapter 60, to:

- a) Enter the permitted facility;
- b) Inspect any records that must be kept under this permit;
- c) Inspect any facility, equipment, practice, or operation permitted or required by this permit;
- d) Sample or monitor for the purpose of assuring permit compliance, any substance or any parameter at the facility or land application site.

### **3. Provide Information**

The permittee shall furnish to the Department within a reasonable time, any information requested, including copies of records, which may be used by the Department to determine whether cause exists for modifying, revoking, reissuing, or terminating the permit, or to determine compliance with the permit or Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes.

### **4. Transfer of Ownership or Control**

This permit shall be transferable to a new owner or operator provided that the permittee notifies the Department by requesting a minor modification of the permit before the date of transfer and provided that the transferee shows evidence of a legal right to use the site and is otherwise in compliance with all applicable provisions of Part III, (B), of the Department's Guidance and Regulations Governing the Land Treatment of Wastes.

5. Operation of Facility

The permittee shall at all times properly maintain and operate all structures, systems, and equipment for treatment, control and monitoring, which are installed or used by the permittee to achieve compliance with this permit or Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Waste.

6. Permit Revocation and Modification

- a) After notice and opportunity for a hearing, this permit may be modified or revoked in whole or in part during its term for cause including, but not limited to, the following:
  - 1) Violation of any terms or conditions of this permit;
  - 2) Obtaining this permit by misrepresentation or failure to disclose fully all of the relevant facts;
  - 3) Any change in operating conditions that requires either a temporary or permanent permit modification; or
  - 4) If the Department finds that the public health, safety or welfare requires emergency action, the Department shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing, the Department shall provide the permittee a revocation hearing and prior notice thereof. Such hearings shall be conducted in accordance with 7 Del. C., Chapter 60.
- b) The Department may revoke this permit if the permittee violates any permit condition, any provisions of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, or fails to pay applicable Department fees.

7. Permit Closure Report

- a) All land approved for the Agricultural Utilization of sludge is required to have a closure report when the land is no longer being utilized as described in permit application. The report must be submitted to the Department within four (4) months of determination that the field will no longer be utilized for sludge application. The closure report will have the following:
  - 1) Letter from permittee stating the application site (with tax parcel number(s)) will no longer receive sludge approved by this Permit;

- 2) Copy of the last sludge monitoring results as required in Part 1, B.1 of this permit;
- 3) Copy of the last soil monitoring results as required in Part 1, B.4 of this permit. A soil test is required after the last land application of sludge;
- 4) Copy of the last groundwater monitoring well results as required in Part 1, B.6 of this permit. A groundwater test is required after the last land application of sludge (If monitoring was previously required).

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or maybe subject under 7 Del. C., Chapter 60.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

10. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

11. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application or any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

12. Compliance Required

The permittee shall comply with all conditions of the permit.

13. Reopener

In the event that the Part III, B, of the Guidance and Regulations Governing the Land Treatment of Wastes or applicable Federal Regulations are revised, this permit may be reopened and modified accordingly after notice and opportunity for a public hearing.

### Part III

#### A. SPECIAL CONDITIONS

The permittee must ensure that the following conditions are met:

1. Monitoring wells
  - a) Groundwater shall be sampled per the frequency listed in Part I, Subsection B.6 of this permit at the following locations at the frequencies indicated.
    - 1) Frame Farm at the five (5) monitoring wells.
    - 2) Cordrey Farms at the three (3) monitoring wells.
  - b) All monitoring wells samples shall be analyzed for the parameters listed in Part I, Subsection B.6 of this permit.
  - c) Copies of the laboratory reports for all groundwater analytical data and the corresponding sampling logs shall be submitted to the Department within thirty days of the sampling date. In addition, the elevation of the top of the casing (TOC) for each monitoring well shall be surveyed in reference to a permanently marked, stationary point. After notice and opportunity for a hearing, the Department may modify the list of parameters specified above based on observations of groundwater quality trends in the area. Groundwater monitoring shall continue in effect until the Department determines that it is no longer necessary.
2. Only sludge meeting the requirements for stabilization and the processed to significantly reduce pathogens by methods approved by the Department and as specified in this permit may be land applied.
3. Sludge shall be transported to the site in accordance with Delaware Waste Transporters Permit No. OH-091.
4. Pre Start Up (Must be accomplished annually for each application site)
  - a) Prior to the application of sludge, buffer zones and the areas on which sludge is to be applied must be clearly marked with stakes or other suitable markers acceptable to the Department.
  - b) The permittee must notify the Department at (302) 739-9946 at least two (2) working days prior to the application of sludge.

- c) Before the permittee can begin to apply sludge to the designated site, a pre start up inspection may be conducted by the Department to verify that proper buffer zones and non application areas are suitably marked. Based on the results of the pre start up inspection, the Department will either:

- 1) Grant approval for sludge application operations to begin or;
- 2) Require the permittee to perform additional site preparation (such work must be performed and approved prior to sludge application).

5. Application Measures

If at any time during the sludge application period the depth to groundwater is less than twenty (20) inches from the surface, all sludge application activities shall immediately cease and the Department shall be notified. Departmental approval shall then be required before sludge application operations can continue.

6. Post Application Measures

- a) The facility must provide the Department with a crop plan for the year in which stabilized sludge, anaerobic lagoon crust, or DAF solids are to be applied to lands specified in this permit. Any changes to the crop rotation plan must be approved by the Department prior to implementation.
- b) The Annual Report shall be submitted to the Department as required in Part I, F.1 of this permit. Should the permittee fail to supply the required documents on or before the deadline specified, the Department may revoke this permit.

7. If, for any reason, any of the contracts or agreements specified in the Project Development Report any one of the approved sites is cancelled or amended, approval granted for use of that site shall be void.

8. Supersedes Previous Permit

This permit supersedes the State Permit Number AGU 0802-S-03, effective December 1, 2008.





AUTHORIZATION TO OPERATE A LAND TREATMENT SYSTEM  
FOR THE  
AGRICULTURAL UTILIZATION OF SLUDGE

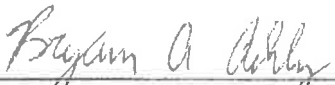
1. Pursuant to the provisions of 7 Del. C., §6003

Mountaire Farms of Delaware, Inc.  
P.O. Box 1320  
Millsboro, Delaware 19966

is hereby granted a permit to operate a land treatment system for the agricultural (Silvacultural) utilization of sludge generated by the Mountaire Farms of Delaware, Inc., Millsboro, Delaware, Wastewater Treatment Facility. This permit is limited to the application of stabilized sludge from the Wastewater Treatment Facility at agronomic rates to the site designated below:

The Frame Farm: Approximately 120 acres of forested land contained within a 272 acre parcel lying south of Sussex County Route 314 (Doc Frame Road), east of State Route 30 and west of Sussex County Route 305 (Hollyville Road).

2. The application rates, monitoring requirements and other permit conditions are set forth in Parts I, II and III hereof.

  
\_\_\_\_\_  
Bryan A. Ashby, Manager  
Surface Water Discharges Section  
Division of Water  
Department of Natural Resources  
and Environmental Control

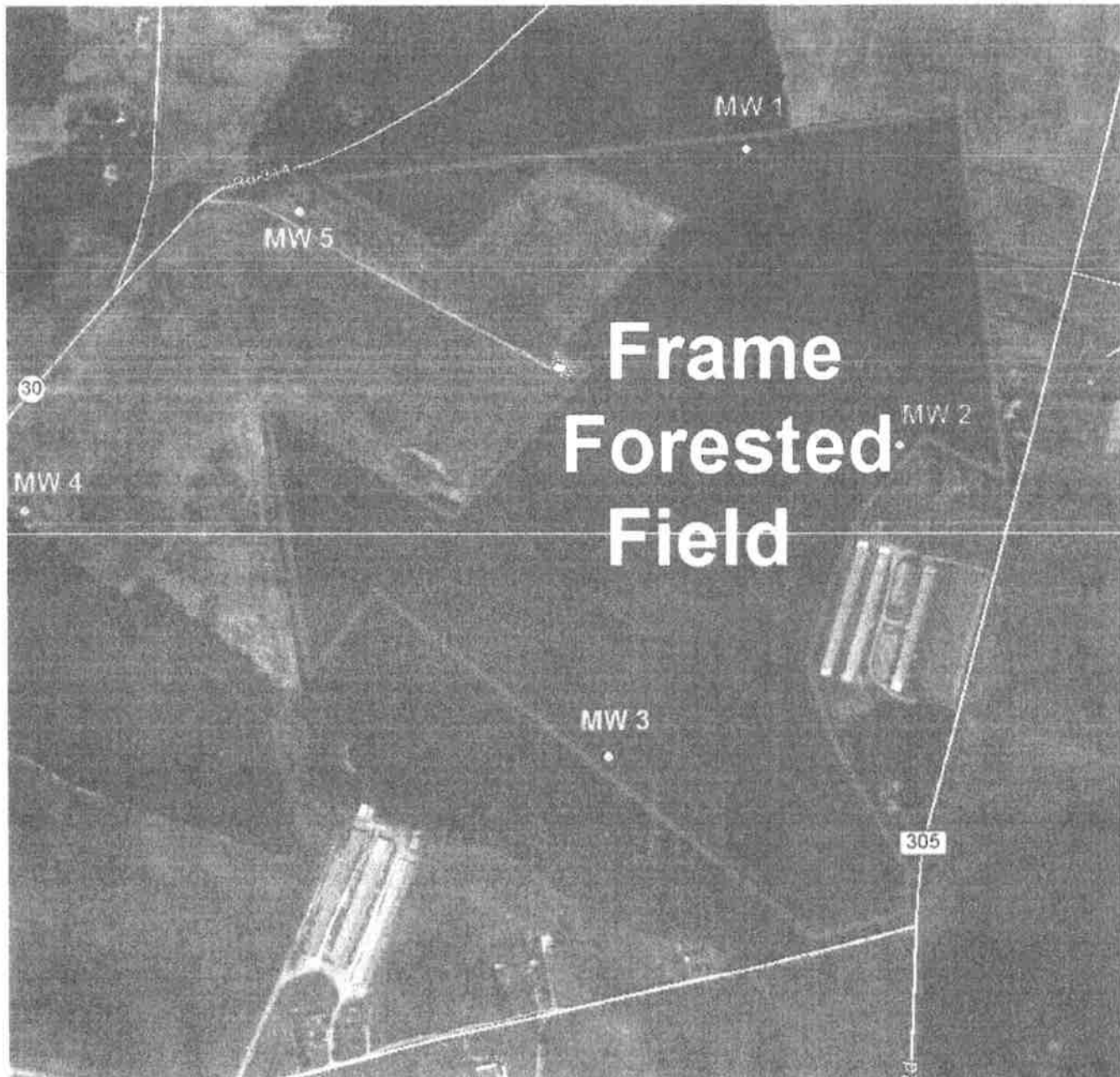
5/30/14  
\_\_\_\_\_  
Date Signed

## Part I

### GENERAL DESCRIPTION OF OPERATION

The operation involves the land application of stabilized sludge from the Mountaire Farms of Delaware Inc., Millsboro Poultry Plant to the Frame Farm Pine Plantation where sludge is land applied at Silvicultural rates. The stabilized sludge will be surface applied using tank mounted spray gun equipment mounted on a truck.

Tax parcel number: 234-27.00-19.00





## REGULATORY AND SUPPORTING DOCUMENTS

The land treatment operations shall be conducted in accordance with the following documents:

1. The Department's Guidance and Regulations Governing the Land Treatment of Wastes: Part III, (B), the Land Treatment of Sludges and Sludge Products (as revised);
2. Sussex County Council Conditional Use No. 1090, December 13, 1994;
3. Sussex County Zoning Commission Conditional Use Permit #1569 dated November 30, 2004;
4. The request dated August 13, 2007 for the modification of State Permit Number AGU 0026/95 to remove the Udell Tract for Silvicultural application of Biosolids; and,
5. The revised Project Development Report (PDR) dated November 4, 2013.

## A.1 SLUDGE APPLICATION LIMITATIONS

During the period beginning on the effective date and lasting through the expiration date the permittee is authorized to operate the land treatment site identified in this permit for the application of stabilized sludge at agronomic rates. The timing of sludge application to the site, as well as the quantity and quality of the sludge to be land applied is specified below:

Sludge shall only be applied to approximately 120 acres of forested land contained within a 272 parcel known as the Frame Farm and described in the Project Development Report dated August 30, 2003 and November 4, 2013.

No more than 142 lbs/ac/yr. of plant available nitrogen (PAN) shall be applied annually to the approved land application area. When calculating loading rates residual mineralized nitrogen from previous sludge application(s) shall be deducted from the 142 lbs/ac/yr. of plant available nitrogen (PAN) permit limit, in accordance with Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes.

Supplemental fertilizers containing nitrogen and/or phosphorus shall not be applied to the land application site without prior written approval by the Department.

Fields with "high" phosphorus soil levels (greater than 150 FIV, 150 ppm Mehlich 3, 120 ppm Bray P 1 or 75 ppm Mehlich 1) must have the phosphorus site index (PSI) calculated and the results submitted to the Department. Fields with PSI's above "low" levels (greater than 50) must a phosphorus management plan to the Department, for review and approval, within sixty (60) days of receipt of the soil analytical data. The phosphorus management plan must demonstrate steps that will be taken to reduce the PSI or phosphorus levels in the soil. Fields with "high" phosphorus soil levels must continue to calculate the PSI at least once every (3) three years until the phosphorus level in the soil is no longer "high". Failure to implement a phosphorous management plan, when applicable, may result in the Department invoking the provisions of Part II, B.6 of this permit.

For those portions of the sludge application area where the depth to seasonal high water table is less than 20 inches but greater than 12 inches, sludge application is limited to May, June or July. Sludge shall only be applied when the actual water table depth is at least 20 inches below the ground surface pursuant to Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes.

## A.2. OTHER LIMITATIONS

Only sludge, which has been treated by a Process to Significantly Reduce Pathogens (PSRP), as defined in Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, shall be applied to any of the land treatment sites.

Application is forbidden during periods of active rain or onto excessively wet ground. Periods of active rain shall be defined more than .25 inches of rain in an hour. A rain gauge must be mounted and maintained on-site at any farm receiving application during any rainfall. Sludge may not be applied when the ground surface is saturated, frozen or

covered with snow or during periods of rain or runoff without written Department approval.

Sludge may not be applied from December 7 through February 15 unless the permittee receives written approval from the Department to land apply sludge during this period.

The permittee shall conform to any conditions required by Sussex County ordinance and policy in addition to the conditions contained in this permit.

The sludge shall be applied so that the application is uniform.

Public access to the sludge application areas must be controlled for at least twelve (12) months after sludge application. Additionally, signage worded identical to what was submitted in the project development report (PDR) shall be posted along the perimeter of each land application field immediately before and for at least twelve (12) months after the completion of PSRP sludge land application activities.

Buffer zones established pursuant to Part III, (B), Subsection 138.2 of the Guidance and Regulations Governing the Land Treatment of Wastes shall be maintained at all times during sludge application.

No sludge shall be applied if sample analysis yields pollutant concentrations in excess of the following values:

Arsenic	75mg/kg	Cadmium	85 mg/kg	Chromium	3000 mg/kg
Copper	4300mg/kg	Lead	840 mg/kg	Mercury	57 mg/kg
Molybdenum	75mg/kg	Nickel	420 mg/kg	Selenium	100 mg/kg
Zinc	7500 mg/kg	PCB	5 mg/kg		

### A.3. GROUNDWATER LIMITATIONS

Application of sludge to the designated fields shall not cause groundwater to be in violation of applicable Federal or State drinking water standards on an average annual basis. Should down-gradient water supply wells (public or private) be impacted above applicable Federal or State drinking water standards from the land application of sludge, the permittee shall be required to provide a free Department approved alternative potable water supply to the affected parties.

Part I

State Permit Number: AGU 1403-S-03

Page 6 of 20

**B. MONITORING REQUIREMENTS**

During the period beginning on the effective date and lasting through the expiration date of this permit, the permittee is authorized to apply PSRP sludge at agronomic rates to the application sites listed in this permit. Such applications shall be monitored by the permittee as specified below:

**B.1 DIGESTED SLUDGE**

Parameter	Unit Measurement	Minimum Frequency	Sample Type
Moisture Content	percent	Twice per year	Composite
Total Nitrogen as N (Moist & Dried)	percent	Twice per year	Composite
Organic Nitrogen as N (Moist & Dried)	percent	Twice per year	Composite
Ammonium and Nitrate Nitrogen as N (Moist & Dried)	percent	Twice per year	Composite
pH	S.U.	Twice per year	Composite
Volatile Solids	percent	Twice per year	Composite
Phosphorus as P (dry weight basis)	percent	Twice per year	Composite
Potassium (dry weight basis)	percent	Twice per year	Composite
Arsenic (dry weight basis)	mg/kg	Every 3 years	Composite
Cadmium (dry weight basis)	mg/kg	Every 3 years	Composite
Chromium (dry weight basis)	mg/kg	Every 3 years	Composite
Copper (dry weight basis)	mg/kg	Every 3 years	Composite
Lead (dry weight basis)	mg/kg	Every 3 years	Composite
Mercury (dry weight basis)	mg/kg	Every 3 years	Composite
Molybdenum (dry weight basis)	mg/kg	Every 3 years	Composite
Nickel (dry weight basis)	mg/kg	Every 3 years	Composite
Selenium (dry weight basis)	mg/kg	Every 3 years	Composite
Zinc (dry weight basis)	mg/kg	Every 3 years	Composite
PCB's (dry weight basis)	mg/kg	Every 3 years	Composite
Calcium (dry weight basis)	mg/kg	Twice per year	Composite
Sodium (dry weight basis)	mg/kg	Twice per year	Composite
Priority Pollutant Scan		Every 3 years	Composite

Digested sludge samples shall be collected at the following location: The secondary aerobic digester.

All sludge samples shall be taken and analyzed in accordance with Part III (B), Section 151 of the Department's Guidance and Regulations Governing the Land Treatment of Wastes. All samples shall be representative of the material that is land applied under this permit. See Part I, F. for reporting requirements.

NOTE: A list of the 126 priority pollutants can be found on 40 CFR, Part 423, Appendix A, 1987.

## **B.2 SLUDGE STABILIZATION PROCESS MONITORING:**

Aerobically digested sludge must meet one of the following processes to achieve PSRP requirements:

All sludge prepared for land application at the sites approved in this permit must meet the requirements in Part III, Section 133.1.1 of the Guidance and Regulations Governing the Land Treatment of Wastes. The permittee shall obtain seven samples of the sludge at the time the sludge is to be utilized for land application. The geometric mean of the density of fecal coliform in the samples shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis). No sludge shall be land applied prior to the permittee demonstrating the stabilization requirements have been achieved.

Or

It shall be demonstrated that sludge meets the time and temperature process monitoring requirements as set forth in subsection 133.1.2.1 in Part III, (B) of the Guidance and Regulations Governing the Land Treatment of Wastes, on a continual basis.

NOTE: Alternative processes shall be approved in writing prior to implementation. See Part I, F for reporting requirements.

## **B.3 VECTOR ATTRACTION REDUCTION:**

Vector attraction reduction must be achieved by alternative (a), 38% volatile solid reduction, as specified in Part III, (B), Subsection 135.2.1 of the Guidance and Regulations Governing the Land Treatment of Wastes shall be demonstrated prior to surface application. Other alternative methods for achieving vector attraction reduction found in Subsection 135 of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, may be employed with prior written Departmental approval.

**B.4 SOIL MONITORING**

Parameter	Unit of Measurement	Minimum Frequency	Sample Type
pH	S.U.	Annually*	Composite
Total Nitrogen as N (dry soil basis)	mg/kg	Annually*	Composite
Total Phosphorus as P (dry soil basis)	mg/kg	Annually*	Composite
Potassium (dry soil basis)	mg/kg	Annually*	Composite
Arsenic (dry soil basis)	mg/kg	Every 5 years*	Composite
Cadmium (dry soil basis)	mg/kg	Every 5 years*	Composite
Chromium (dry soil basis)	mg/kg	Every 5 years*	Composite
Copper (dry soil basis)	mg/kg	Every 5 years*	Composite
Lead (dry soil basis)	mg/kg	Every 5 years*	Composite
Mercury (dry soil basis)	mg/kg	Every 5 years*	Composite
Molybdenum (dry soil basis)	mg/kg	Every 5 years*	Composite
Nickel (dry soil basis)	mg/kg	Every 5 years*	Composite
Selenium (dry soil basis)	mg/kg	Every 5 years*	Composite
Zinc (dry soil basis)	mg/kg	Every 5 years*	Composite
Aluminum (dry weight basis)	mg/kg	Annually*	Composite
Magnesium (dry soil basis)	mg/kg	Annually*	Composite
Manganese (dry soil basis)	mg/kg	Annually*	Composite
Iron (dry weight basis)	mg/kg	Annually*	Composite
Sodium (dry soil basis)	mg/kg	Annually*	Composite
% Organic Matter	Percent	Annually*	Composite

**NOTE:** Composite soil samples representing each soil series identified within each sludge application area shall be collected. Soil chemistry testing must be in accordance with the Methods of Soil Analysis published by the American Society of Agronomy, and in accordance with Part III, (B), Section 151 of the Department's Guidance and Regulations Governing the Land Treatment of Wastes. See Part I, F. for reporting requirements.

\* Parameters not required to be sampled if digested sludge, is not applied during the "minimum frequency" periods.

The Department may modify the sampling frequency based upon review of continuing or additional analyses.

**B.5 PLANT TISSUE AND LEAFLITTER ANALYSIS**

Not required at this time.

Part I

State Permit Number: AGU 1403-S-03

Page 9 of 20

**B.6 GROUNDWATER MONITORING**

<b>Parameter</b>	<b>Unit of Measurement</b>	<b>Minimum Frequency</b>	<b>Sample Type</b>
Depth to Water	Hundredths of a foot	Quarterly	In-Situ
pH	S.U.	Quarterly	Field Test
Dissolved Oxygen	mg/l	Quarterly	Field Test
Specific Conductivity	UMHOS/CM	Quarterly	Field Test
Temperature	°C	Quarterly	Field Test
Total Dissolved Solids	mg/l	Quarterly	Grab
Total Nitrogen as N	mg/l	Quarterly	Grab
Organic Nitrogen	mg/l	Quarterly	Grab
Nitrate + Nitrite Nitrogen	mg/l	Quarterly	Grab
Ammonium as N	mg/l	Quarterly	Grab
Total Phosphorus	mg/l	Quarterly	Grab
Chloride	mg/l	Quarterly	Grab
Sodium	mg/l	Quarterly	Grab
Arsenic, Total	mg/l	Every 5 Years	Grab
Cadmium, Total	mg/l	Every 5 Years	Grab
Chromium, Total	mg/l	Every 5 Years	Grab
Copper, Total	mg/l	Every 5 Years	Grab
Lead, Total	mg/l	Every 5 Years	Grab
Mercury, Total	mg/l	Every 5 Years	Grab
Molybdenum, Total	mg/l	Every 5 Years	Grab
Nickel, Total	mg/l	Every 5 Years	Grab
Selenium, Total	mg/l	Every 5 Years	Grab
Zinc, Total	mg/l	Every 5 Years	Grab
Fecal Coliform	Colonies/100ml	Annually	Grab

\* Groundwater samples shall be collected and analyzed individually from the five (5) monitoring wells at the Frame Farm. Groundwater samples shall be taken in compliance with the monitoring requirements specified above and shall be taken at each monitoring well in accordance with procedures approved by the Department and listed in the Department's Field Manual for Groundwater Sampling (March, 1988).

\*\* Groundwater monitoring results for each monitoring well shall be reported using the State of Delaware Well Identification Tag Number that is required on all wells in accordance with the Delaware Regulations Governing the Construction and Use of Wells, Section 10, A.

**C. SCHEDULE OF COMPLIANCE**

Not required at this time.

**D. BONDING**

As a requirement for maintaining this permit, the permittee shall file with the Department a bond or other security on a form approved by the Department. The bond shall be payable to the Department and the obligation of the bond shall be conditioned upon the fulfillment of all requirements related to this permit. Liability under the bond shall remain in effect until the expiration date of this permit. A bond in the amount of \$25,000 shall be executed by the applicant and by a corporate surety licensed to do business in this State. Instead of having a bond executed by a corporate surety, the applicant may elect to deposit in an escrow account set up by the permittee, filing copies of the escrow agreement with the Department, cash or negotiable bonds of the federal government or of this State or any other securities acceptable to the Department. The amount of the cash deposit or the market value of any securities shall be at least equal to the required sum of the bond. The Department shall receive and hold the cash or securities in trust, for the purpose for which the deposit is posted. The obligation of the applicant and of any corporate surety under the bond shall become due and payable, and all or any part of any cash or securities shall be applied to payment of the costs of properly fulfilling any requirement of the Permit if the Department has:

1. Notified the applicant and any corporate surety that the conditions of the permit have not been fulfilled, and specified in the notice the particular deficiencies in the fulfillment of the permit conditions.
2. Given the applicant and any corporate surety a reasonable opportunity to correct the deficiencies and to fulfill all of the conditions of the permit; and
3. Determined that, at the end of a reasonable length of time, some or all of the deficiencies specified in Part I, D.1., above, remain uncorrected.

**E. MONITORING**

1. Representative Sampling:

Samples and measurements taken as required herein shall be representative of the volume and nature of the sludge to be land applied.

2. The permittee shall automatically resample the sludge and submit to the Department and landowner additional analyses if there has been a significant change (greater than 25%) in the quality of sludge. The permittee shall then be required to recharacterize the sludge in order to determine if any change in the land limiting constituent has occurred. Any change in sludge characteristics that affects the land limiting constituent shall be included in revised Project Development Reports which shall be submitted to the Department. After a review of these results, the Department may invoke the provisions of Part II, B.6 of this permit.



3. Recording of Results:

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a) The exact place, date and time of sampling and/or measurement;
- b) The person(s) who performed the sampling and/or measurement;
- c) The dates the analyses were performed and the time the analyses were begun;
- d) The person(s) who performed the analyses;
- e) The results of each analysis.

4. Records Retention:

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation shall be retained for five (5) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

**F. REPORTING**

1. The permittee shall submit to the Department and landowners an annual operation report on or before February 1 of each year. The annual report shall be in a format acceptable to the Department. The annual operation report shall include the following:

- a) The daily operational record (as specified in Part II, A.1);
- b) The weight (wet and dry tons) and volume of sludge utilized at the land application site;
- c) Any changes in ownership of the land where the operation is conducted or any change in any lease agreement for the use of such land that may affect or alter the operator's rights upon such land;
- d) A chemical analysis of soil from each field for the constituents identified in Part I, B.4. The results shall be compared to the corresponding soil data submitted as a part of the Project Development Reports. The procedure for soil analysis shall be consistent with Department guidance.
- e) Site maps of the same scale and contour interval as the maps submitted with the Project Development Reports, showing the boundaries within each

field where sludge has been applied during the previous year.

- f) For each site: the cropping scheme followed during the previous year and anticipated for the coming year; Crop yield data and an explanation of which portions of the plants were harvested; Results of plant tissue and grain analyses, if required; Identification of fields to be used during the coming year; Sludge application rates for the coming year based on nitrogen mineralization calculations from previous sludge application practices;
  - g) Sludge application rate adjustments, if necessary (See Part I, A.1.); and
  - h) Any other information required by the Department.
2. Sludge analytical and stabilization process monitoring data obtained during the previous monitoring period shall be summarized for that period and postmarked no later than the 28th day of the month following the completed reporting period.

**DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL  
CONTROL, DIVISION OF WATER, SURFACE WATER  
DISCHARGES SECTION, 89 KINGS HIGHWAY, DOVER, DE 19901.  
TELEPHONE: 302-739-9946**

When submitting monitoring results, copies of the original laboratory sheets should be included. If more than one sample is analyzed during any month, a table showing the range of constituent concentration values shall be prepared and included with the submittal.

3. **Test Procedures**

Test procedures for laboratory analyses shall conform to the applicable test procedures identified in Part III, (B), Section 152 of the Department's Guidance and Regulations Governing the Land Treatment of Wastes, unless otherwise specified in this permit.

## G. DEFINITIONS

1. "Agricultural Utilization" means the application rate of wastes or sludge or sludge products that shall not exceed the nutrient needs of the crop grown on the particular soil plus the other assimilative pathways in soils (e.g., immobilization with organic material, volatilization, and leachate in compliance with drinking water standards). This term may be used interchangeably with "agronomic rate"
2. "Composite" means a series of grab samples which have been collected in a manner such that the final sample is representative of the volume and characteristics of the material to be analyzed.
3. "Forest Management Activities" are practices, techniques or activities which are designated for the purpose of conserving, protecting, or enhancing land as forestland over the long term.
4. "Land Application" means the placement of sludge, treated sludge, or any other product containing these materials within 2 feet below the surface of land used to support vegetative growth.
5. "Land Treatment" means a technology for the intimate mixing or dispersion of wastes into the upper zone of the plant-soil system with the objective of microbial stabilization, immobilization, selective dispersion, or crop recovery leading to an environmentally acceptable assimilation of the waste.
6. "PSRP" means Process to Significantly Reduce Pathogens.
7. "Sewage" means water-carried human or animal wastes from septic tanks, water closets, residences, buildings, industrial establishments, or other places, together with such groundwater infiltration, subsurface water, admixture of industrial wastes or other wastes as may be present.
8. "Sewage sludge" means sludge which derives in whole or in part from sewage.
9. "Silvacultural" means any forest management activity including but not limited to: the harvest of timber, construction of roads and trails for the purpose of forest management, and preparation of property for reforestation.
10. "Sludge" means the accumulated semi-liquid suspension, settled solids, or dried residue of these solids that is deposited from (a) liquid waste in a municipal or industrial wastewater treatment plant, (b) surface or groundwater treated in a water treatment plant, whether or not these have undergone treatment. Septage is included herein as sludge.
11. "Treatment" means a process which alters, modifies or changes the biological, physical, or chemical characteristics of sludge or liquid wastes.
12. "Vector Attraction" is the characteristic of sewage sludge that attracts rodent, flies, mosquitoes, or other organisms capable of transporting infectious agents.

## **Part II**

### **A. MANAGEMENT REQUIREMENTS**

#### **1. Land Application of Sludge**

- a) Sludge shall be applied to the site evenly by means of a coarse spray over the forested tract. The permittee shall ensure that ponding and excessive aerosol formation are minimized during application.
- b) The permittee shall prepare and maintain an operational record for each day that sludge is applied and when any other management activities are conducted at the land application sites. The daily operational record shall include the following:
  - 1) The date, type, and wet and dry weights of the sludge applied;
  - 2) The facility from which the sludge originated;
  - 3) A record of any major deviations from the operating plan;
  - 4) General daily weather conditions;
  - 5) The application rate for sludge;
  - 6) A map for each site showing the area of daily activity;
  - 7) A record of all actions taken to correct violations of the Delaware Environmental Protection Act and the Department's Regulations; and,
  - 8) Management undertaken, such as planting and harvesting of crops, fertilizers and chemicals added, frequency of irrigation, techniques used, etc.

#### **2. Change in Operation**

The application of sludge to the site authorized herein shall be consistent with the terms and conditions of this permit. The application of sludge at levels in excess of the amount necessary to provide plant available nitrogen for the crop being grown, in accordance with the limits identified in Part I, A.I, 2, and 3 of this permit, shall constitute a violation of the permit. Any anticipated facility expansion, production increase, or change in site conditions that would affect the land limiting constituent, create a new land limiting constituent, or adversely affect site conditions must be reported to the Department. Upon review of this information, the Department may invoke the provisions of Part II, B.6 of this permit.

3. Noncompliance Notification

The permittee shall report to the Department:

- a) In writing thirty (30) days before any planned physical alteration or addition to the permitted facilities or activities, if that alteration or addition would result in any significant change in information that was submitted during the permit application process;
- b) In writing thirty (30) days before any anticipated change that would result in noncompliance with any permit condition or Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes;
- c) Orally within twenty-four (24) hours from the time the permittee became aware of any noncompliance that may endanger the public health or the environment, at (302) 739-9946 during normal working hours, or (800) 662-8802 after normal working hours, and;
- d) In writing as soon as possible but within five (5) days of the date the permittee knows or should know of any noncompliance unless extended by the Department.

This report shall contain:

- 1) A description of the noncompliance and its cause;
  - 2) The period of noncompliance including to the extent possible, times and dates and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
  - 3) Steps taken or planned to reduce or eliminate reoccurrence of the noncompliance.
- e) In writing as soon as possible after the permittee becomes aware of relevant facts not submitted or incorrect information submitted, in a permit application or any report to the Department. Those facts or the correct information shall be included as a part of this report.

4. Minimize Impacts

The permittee shall take all necessary actions to eliminate and correct any adverse impact on the public health or the environment resulting from permit noncompliance.

## B. RESPONSIBILITIES

### 1. Renewal Responsibilities

At least 180 days before the expiration date of this permit, the permittee shall submit a new application for a permit or notify the Department of the intent to cease operation by the expiration date. In the event that a timely and sufficient reapplication has been submitted and the Department is unable, through no fault of the permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable.

### 2. Entry and Access

The permittee shall allow the Department, consistent with 7 Del. C., Chapter 60, to:

- a) Enter the permitted facility;
- b) Inspect any records that must be kept under this permit;
- c) Inspect any facility, equipment, practice, or operation permitted or required by this permit;
- d) Sample or monitor for the purpose of assuring permit compliance, any substance or any parameter at the facility or land application site.

### 3. Provide Information

The permittee shall furnish to the Department within a reasonable time, any information requested, including copies of records, which may be used by the Department to determine whether cause exists for modifying, revoking, reissuing, or terminating the permit, or to determine compliance with the permit or of Part III, (B), the Guidance and Regulations Governing the Land Treatment of Wastes.

### 4. Transfer of Ownership or Control

This permit shall be transferable to a new owner or operator provided that the permittee notifies the Department by requesting a minor modification of the permit before the date of transfer and provided that the transferee shows evidence of a legal right to use the site and is otherwise in compliance with all applicable provisions of Part III, (B), of the Department's Guidance and Regulations Governing the Land Treatment of Wastes.

5. Operation of Facility

The permittee shall at all times properly maintain and operate all structures, systems, and equipment for treatment, control and monitoring, which are installed or used by the permittee to achieve compliance with this permit or Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes.

6. Permit Revocation and Modification

- a) After notice and opportunity for a hearing, this permit may be modified or revoked in whole or in part during its term for cause including, but not limited to, the following:
  - 1) Violation of any terms or conditions of this permit;
  - 2) Obtaining this permit by misrepresentation or failure to fully disclose all of the relevant facts;
  - 3) Any change in operating conditions that requires either a temporary or permanent permit modification; or
  - 4) If the Department finds that the public health, safety or welfare requires emergency action, the Department shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing, the Department shall provide the permittee a revocation hearing and prior notice thereof. Such hearings shall be conducted in accordance with 7 Del. C., Chapter 60.
- b) The Department may revoke this permit if the permittee violates any permit condition, any provisions of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, or fails to pay applicable Department fees.

7. Permit Closure Report

- a) All land approved for the Agricultural Utilization of sludge is required to have a closure report when the land is no longer being utilized as described in permit application. The report must be submitted to the Department within four (4) months of determination that the field will no longer be utilized for Biosolids application. The closure report will have the following:
  - 1) Letter from permittee stating the application site (with tax parcel number(s)) will no longer receive Biosolids approved by this Permit;
  - 2) Copy of the last Biosolids monitoring results as required in Part 1, B.1 of this permit;

- 3) Copy of the last soil monitoring results as required in Part 1, B.4 of this permit. A soil test is required after the last land application of sludge;
- 4) Copy of the last groundwater monitoring well results as required in Part 1, B.6 of this permit. A groundwater test is required after the last land application of sludge (If monitoring was previously required).

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under 7 Del. C., Chapter 60.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

10. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

11. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application or any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

12. Compliance Required

The permittee shall comply with all conditions of the permit.

13. Reopener

In the event that the Part III, B, of the Guidance and Regulations Governing the Land Treatment of Wastes or applicable Federal Regulations are revised, this permit may be reopened and modified accordingly after notice and opportunity for a public hearing.



### **PART III**

#### **A. SPECIAL CONDITIONS**

The permittee must ensure that the following conditions are met:

1. Monitoring wells
  - a) Groundwater shall be sampled at the following locations at the frequencies indicated.
    - 1) Frame Farm: Groundwater shall be sampled per the frequency listed in Part I, Subsection B. 6. at the five (5) monitoring wells.
  - b) All monitoring wells samples shall be analyzed for the parameters listed in Part I, Subsection B.6 of this permit.
  - c) Copies of the laboratory reports for all groundwater analytical data and the corresponding sampling logs shall be submitted to the Department within thirty days of the sampling date. In addition, the elevation of the top of the casing (TOC) for each monitoring well shall be surveyed in reference to a permanently marked, stationary point. After notice and opportunity for a hearing, the Department may modify the list of parameters specified above based on observations of groundwater quality trends in the area. Groundwater monitoring shall continue in effect until the Department determines that it is no longer necessary.
2. Only sludge meeting the requirements for stabilization and the processed to significantly reduce pathogens by methods approved by the Department and as specified in this permit may be land applied.
3. Sludge shall be transported to the site in accordance with Delaware Waste Transporters Permit No. OH-091.
4. Pre Start-Up (Must be accomplished annually for each application site)
  - a) Prior to the application of sludge, buffer zones and the areas on which sludge is to be applied must be clearly marked with stakes or other suitable markers acceptable to the Department.
  - b) The permittee must notify the Department at (302) 739-9946 at least two (2) working days prior to initial seasonal application.
  - c) Before the permittee can begin to apply sludge to the designated site, the Department may conduct a pre start-up inspection to verify that proper buffer zones and non-application areas are suitably marked. Based on the results of the pre-startup inspection, the Department will either:

- 1) Grant approval for sludge application operations to begin or;
- 2) Require the permittee to perform additional site preparation (such work must be performed and approved prior to sludge application);

5. Application Measures

The permittee will follow the application measures as outlined in the 2013 revised Project Development Report and the Guidance and Regulations Governing the Land Treatment of Wastes, and conditions of this permit.

6. Post Application Measures

- a) Any changes in the implementation or continuance of this project must be approved by the Department.
- b) The Annual Report shall be submitted to the Department as required in Part I, F.1 of this permit. Should the permittee fail to supply the required documents on or before the deadline specified, the Department may revoke this permit.

7. If, for any reason, any of the contracts or agreements specified in the Project Development Report any one of the approved sites is cancelled or amended, approval granted for use of that site shall be void.

8. Supersedes Previous Permit

This permit supersedes the State Permit No. AGU 0803-S-03, effective December 1, 2008.

**EXHIBIT C**  
**NOTICE OF VIOLATION**



STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES &  
ENVIRONMENTAL CONTROL  
DIVISION OF WATER  
89 KINGS HIGHWAY  
DOVER, DELAWARE 19901

First Class Mail and  
CERTIFIED MAIL # 7014 1820 0000 5868 0495

November 2, 2017

**NOTICE OF VIOLATION  
W-17-GWD-13**

Mike W. Tirrell, Executive Vice President of Business Strategy & Administration  
Mountaire Farms of Delaware, Inc  
PO Box 1320  
Millsboro DE 19966

**Re: Notice of Violation –Mountaire Farms of Delaware, Inc.  
State of Delaware Spray Irrigation Permit Number 359191-04  
State of Delaware Agricultural Utilization Permit AGU 1402-S-03**

Dear Mr. Tirrell,

Pursuant to the authority in 7 *Del.C.* § 6005, this **Notice of Violation (NOV)** is being issued to Mountaire Farms of Delaware, Inc. (Mountaire) for violation of 7 *Del.C.*, Chapter 60, 7 *Del.Admin. C.* § 7101 *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems* (the On-Site Regulations), State Permit 359191-04 (Permit), 7 *Del.Admin. C.* § 7103 *Guidance and Regulations Governing the Land Treatment of Wastes* (the Biosolids Regulations) and State Permit AGU 1402-S-03 as documented below.

**Part I. Spray Irrigation Permit Number 359191-04**

**SPRAY IRRIGATION - BACKGROUND**

Mountaire is permitted to treat and spray irrigate reclaimed wastewater onto agricultural farmland divided into 13 spray zones located north and south of State Route 24, Millsboro, Delaware. Approximately 542 acres of the 928 acre farmland is permitted for wet and cold weather use. The facility is permitted to dispose of a monthly average quantity of 2.6 million gallons per day at a rate not to exceed 2.5 inches per acre averaged over a 7 day period. The facility has been designed for a monthly effluent Total Nitrogen concentration of 15.6 mg/L. The total amount of nitrogen that may be applied to each spray field acre annually is 320 lbs.

*Delaware's good nature depends on you!*

*Increase in Total Nitrogen Effluent Concentrations*

On September 7, 2010, Mountaire received a Non-Compliance Notice from the Groundwater Discharges Section related to the assessment of nitrates found in numerous monitoring wells and the groundwater impact associated with spray irrigation. At the time of the assessment, infield monitoring wells showed nitrate levels averaging 25 mg/L. The permittee was required to install lysimeters and provide monthly Nitrogen Balance Spreadsheets demonstrating the nitrate concentration did not exceed 10 mg/L.

In an effort to improve wastewater treatment processes and overall effluent water quality, in 2011 the permittee proposed the installation of a Dissolved Air Floatation Unit (DAF), a Modified Ludzack-Ettinger Unit (MLE) and anaerobic lagoons to improve biological nutrient removal. The December 7, 2010 *Design Development Report Addendum 2011 Wastewater Treatment Improvements (DER)* submitted by CABA Associates, Inc. on behalf of Mountaire specifically stated on Page 2 and Attachment B Page 1 and 2 that the proposed upgrades would provide the necessary treatment technology to achieve an effluent concentration of 15.6 mg/L of Total Nitrogen. Following construction of the proposed upgrades in 2012, effluent quality had shown improvement for Total Nitrogen until early 2015. However, since early 2015 effluent quality has exceeded the 2010 design criteria.

The 2017 Annual Compliance Inspection performed by GWDS staff on July 20, 2017 noted an increase in the effluent Nitrogen concentrations on page 8 of the report. The previous permit and renewal permit both require Mountaire to operate in accordance with the December 7, 2010 Design Development Report which indicates the effluent will be 15.6 mg/L. A data analysis of the effluent indicated Total Nitrogen concentrations in the effluent has been as high as 76.75 mg/L in April 2017. The On-Site Regulations, 7 Del.Admin C. § 7101 - 6.5.3.2.1.1, requires "If there has been significant increase (> 25%) in the characterization of any one parameter of the effluent wastewater as established in the Design Engineer Report, the permittee shall resample the wastewater and submit the additional analyses to the Department. The permittee shall re-characterize the wastewater to determine if a change in treatment is required and/or if the land limiting constituent has changed. If a change in treatment is required and/or if the land limiting constituent has changed, a revised Design Engineer Report shall be submitted to the Department." This regulatory requirement was also iterated in the previous permit in Part I.I.1 and in the renewal permit in Part I.D.8 and Part II.B.1.

Because the facility is currently exceeding the design value by more than 25%, and in an attempt to gain voluntary compliance in accordance with 7 Del. Admin C. § 7101, the GWDS issued Mountaire's 2017 renewal permit with a Schedule of Compliance, Part I.F.1 of the permit, requiring Mountaire to investigate the cause of the elevated effluent Nitrogen, propose remedial action, and return the facility to compliance within 90 days. The Schedule of Compliance required a Corrective Action Plan be submitted to the GWDS by August 31, 2017 addressing the elevated Total Nitrogen concentration in the effluent. To date, Mountaire has not provided a Corrective Action Plan to the GWDS nor has Mountaire requested an extension. In addition to the effluent Nitrogen concentration trending upward, Mountaire has had an increase in non-compliant BOD, TSS and Fecal Coliform concentrations.

On August 18, 2017, Mountaire appealed the 2017 renewal permit to the Environmental Appeals Board. The appeal disputes the above mentioned Schedule of Compliance and is pending a hearing.

**Recent Wastewater Treatment Plant (WWTP) System Upset**

On September 5, 2017, the GWDS received a notice via cover letter attached to Mountaire's July Discharge Monitoring Report (DMR) indicating operations staff discovered that effluent composite samples were being collected at an invalid sampling point. The letter further noted:

1. The composite sampler only collected from clarifier A. Clarifier B was noted as containing a greater concentration of solids carry over.
2. The composite sampler was moved to a wet well to better represent effluent parameter concentrations from both clarifiers.
3. The facility had enlisted the services of Tidewater Utilities to restore system functionality and Reid Engineering Co. Inc., to evaluate the system and provide engineering services related to system upgrades, if needed.

On September 7, 2017, the GWDS received verbal notice from the facility's operational staff regarding the discovery of additional non-compliance items:

1. Two grab samples were collected at spray pivots over a 2 day back-to-back period for September 2017.
2. Fecal Coliform on 8/31/17 exceeded 1,000,000 col/100 ml.
3. Total chlorine residual was 0.2 mg/L.
4. Not all flow from the clarifiers discharges into the storage lagoon. Their investigation found lines bypassing the lagoon and discharging directly to central pivots.
5. Preliminary tests and evaluation conducted by the facility and contractors indicate that the system needs to be reseeded.

On September 8, 2017, the GWDS provided Mountaire with written notice (email) regarding their non-compliant Fecal Coliform and outlining required minimum mitigation efforts, items to be addressed, and documentation to be submitted concerning the Non-Compliance Event (NCE).

On September 13, 2017, the GWDS received Mountaire's 5-day Non-Compliance Notification Letter. After review of this notice, on September 15, 2017, the Division of Water responded requesting additional clarification.

On September 20, 2017, the GWDS received Mountaire's bi-weekly progress report along with another 5-day Non-Compliance Notification Letter. Subsequently, on September 29, 2017, the Division of Water responded indicating that this submittal did not comply with the requirements of the Department's September 15, 2017 letter requiring additional actions and information.

On September 20, 2017 and September 26, 2017, Mountaire met with the Department to discuss the NCE, corrective actions that Mountaire was performing and/or scheduling to bring the

facility back into compliance, and enhanced sampling and reporting that is required until the NCE is resolved.

### SPRAY IRRIGATION - VIOLATIONS

Pursuant to the authority in 7 Del.C., § 6005, Mountaire is hereby notified that it is in violation of the facility's State Permit 359191-04 as cited below:

**1. Discharged effluent exceeded the permitted design effluent Total Nitrogen concentration by over 25%.**

**Citation:**

Permit Number 359191-04, Part I.B.15 states, *"The slow rate land treatment operation shall be conducted in accordance with the following documents: 15. The Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABE Associates, Inc. dated December 7, 2010."*

Permit Number 359191-04, Part I.D.8 states, *"Design Effluent Nitrogen Concentration: The facility has been designed for a monthly effluent Total Nitrogen concentration of 15.6 mg/L. If the effluent exceeds a Total Nitrogen concentration of 19.5 mg/L [Design Value + 25%] in any calendar month, the permittee shall resample the wastewater and submit the additional analyses to the Groundwater Discharges Section. If the effluent exceeds 19.5 for over a three month period, the permittee must have the system evaluated to determine the cause and submit a revised Design Engineer Report to the Groundwater Discharges Section. If the effluent exceeds 29.3 [Design Value +50%], the Department may invoke the provisions of Part V.A.1 of this permit. [Also reference Part II.B.1.]"* This permit condition issued in the 2017 permit is a combination and clarification of previous permit conditions carried over from the 2009 Permit DEN Number 359191-02: Part I.A.15, and Part I.I.1.

Permit Number 359191-04, Part II.B.1 and Section 6.5.3.2.1.1 of the On-Site Regulations state, in part, *"If there has been significant increase (> 25%) in the characterization of any one parameter of the effluent wastewater as established in the Design Engineer Report, the permittee shall resample the wastewater and submit the additional analyses to the Department. The permittee shall re-characterize the wastewater to determine if a change in treatment is required and/or if the land limiting constituent has changed. If a change in treatment is required and/or if the land limiting constituent has changed, a revised Design Engineer Report shall be submitted to the Department."*

**Violation:**

Since 2015, Effluent Total Nitrogen concentrations have been exceeding the 15.6 mg/L design value and have been as high as 641 mg/L in September of 2017. Mountaire's Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABE Associates, Inc., dated December 7, 2010, indicates effluent concentrations will not exceed 15.6 mg/L. Mountaire failed to notify the Department of the aforementioned non-compliant condition in writing until September 20, 2017.

Characteristic	Date	Result	Unit
Total Nitrogen	1/4/2017	56.2	mg/L
Total Nitrogen	2/8/2017	41.86	mg/L
Total Nitrogen	3/1/2017	18.76	mg/L
Total Nitrogen	4/24/2017	76.75	mg/L
Total Nitrogen	5/25/2017	30.8	mg/L
Total Nitrogen	6/21/2017	31.47	mg/L
Total Nitrogen	7/28/2017	26	mg/L
Total Nitrogen	8/30/2017	406	mg/L
Total Nitrogen	9/14/2014	368	mg/L
Total Nitrogen	9/21/2017	356	mg/L
Total Nitrogen	9/26/2017	641	mg/L
Total Nitrogen	9/28/2017	210	mg/L
Total Nitrogen	9/29/2017	320	mg/L
Total Nitrogen	10/2/2017	172	mg/L
Total Nitrogen	10/3/2017	163	mg/L
Total Nitrogen	10/4/2017	142	mg/L
Total Nitrogen	10/5/2017	164	mg/L
Total Nitrogen	10/6/2017	184	mg/L
Total Nitrogen	10/9/2017	151	mg/L
Total Nitrogen	10/10/2017	182	mg/L
Total Nitrogen	10/9/2017	151	mg/L
Total Nitrogen	10/10/2017	182	mg/L
Total Nitrogen	10/11/2017	105	mg/L
Total Nitrogen	10/12/2017	98	mg/L
Total Nitrogen	10/13/2017	102	mg/L
Total Nitrogen	10/16/2017	98.2	mg/L
Total Nitrogen	10/17/2017	122	mg/L
Total Nitrogen	10/18/2017	136	mg/L
Total Nitrogen	10/19/2017	111	mg/L
Total Nitrogen	10/20/2017	118	mg/L

**2. The permit limit of 320 lbs/acre-year for Nitrogen loading was exceeded for 2015.**

**Citation:**

Permit Number 359191-04, Part I.D.9 which states, in part, *"The total amount of nitrogen that may be applied to each spray field acre shall not exceed the following amounts...320 lbs/year."*



**Violation:**

2015: Mountaire exceeded the permitted total amount of nitrogen that may be applied to each spray field acre, 320 lbs/year. An email, dated September 9, 2016, from Mountaire providing updated Annual Report information for 2015 indicated Nitrogen was over applied on 11 of the 13 fields.

2017: By August of 2017, Mountaire has already exceeded the permitted total amount of Nitrogen that may be applied to each spray field acre for the year, 320 lbs/year. Reporting through August shows 9 out of 13 fields have already exceeded the limit for the calendar year 2017. Reporting showed the highest cumulative application rate at 646 lbs/acre. August's Report alone showed 6 fields were loaded in excess of the permit limit just in the month of August.

Field	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
CB3	20.2	13.37	9.82	16.58	16.24	13.78	Failed to Report	413.95	2.44	506.38
CB3A	28.89	37.81	13.99	0	27.99	27.23	Failed to Report	0	0	135.91
CB3B	47.47	19.61	7.33	39.01	26.26	21.76	Failed to Report	104.75	355.36	621.55
CB3C	19.36	23.92	13.69	94.83	0	0	Failed to Report	484.21	402.03	1038.04
CB3DE	23.71	19.47	8.71	107.68	16.05	8.65	Failed to Report	344.21	195.11	723.59
CB3DW	44.24	22.7	6.15	0	41.37	45.26	Failed to Report	179.21	0	338.93
WHBJ1	15.28	24.48	9.09	51.24	6.31	1.13	Failed to Report	24.95	71.80	204.28
WHBJ2	40.9	32.79	12.72	56.07	17.8	25.61	Failed to Report	388	253.10	826.99
WHBJ3	29.56	13.08	15.13	51.88	16.95	19.3	Failed to Report	344.29	312.46	802.65
WHBJ4	21.42	0	7.36	18.07	14.86	14.67	Failed to Report	338.24	196.07	610.69
WHBJ5	31.99	24.66	13.07	50.67	4.37	5.29	Failed to Report	268.04	211.51	609.60
WHBJ6	47.58	29.88	0.04	63.18	11.16	13.14	Failed to Report	481.10	183.21	829.38
WHBJ7	35.64	20.43	12.99	24.92	19.1	19.04	Failed to Report	212.35	186.96	531.43

**3. The permit limit of 50 mg/L for BOD<sub>5</sub> was exceeded on the following days:**

**Citation:**

Permit Number 359191-04, Part I.D.11 states, in part, "The facility has been designed for limited public access. The treated wastewater utilized for limited public access sites must meet the following daily permissible average concentrations... a. The 5-day Biochemical Oxygen Demand (BOD<sub>5</sub>) of the treated wastewater must not exceed 50 mg/L."

**Violation:**

Mountaire reported the permit limit of 50 mg/L for BOD<sub>5</sub> was exceeded on the following days:

Characteristic	Date	Result	Unit
Biological Oxygen Demand (BOD)-5	4/2/2015	78.4	mg/L
Biological Oxygen Demand (BOD)-5	6/2/2015	148	mg/L

Biological Oxygen Demand (BOD)-5	7/1/2015	99.5	mg/L
Biological Oxygen Demand (BOD)-5	8/5/2015	167	mg/L
Biological Oxygen Demand (BOD)-5	11/10/2015	68.4	mg/L
Biological Oxygen Demand (BOD)-5	1/6/2016	67.7	mg/L
Biological Oxygen Demand (BOD)-5	2/17/2016	82	mg/L
Biological Oxygen Demand (BOD)-5	3/2/2016	65.2	mg/L
Biological Oxygen Demand (BOD)-5	4/6/2016	58.3	mg/L
Biological Oxygen Demand (BOD)-5	5/25/2016	144	mg/L
Biological Oxygen Demand (BOD)-5	6/22/2016	73.6	mg/L
Biological Oxygen Demand (BOD)-5	11/9/2016	69.1	mg/L
Biological Oxygen Demand (BOD)-5	7/28/2017	54.3	mg/L
Biological Oxygen Demand (BOD)-5	8/30/2017	816	mg/L
Biological Oxygen Demand (BOD)-5	8/31/2017	1200	mg/L
Biological Oxygen Demand (BOD)-5	9/6/2017	256	mg/L
Biological Oxygen Demand (BOD)-5	9/14/2017	990	mg/L
Biological Oxygen Demand (BOD)-5	9/19/2017	210	mg/L
Biological Oxygen Demand (BOD)-5	9/22/2017	1210	mg/L
Biological Oxygen Demand (BOD)-5	9/26/2017	530	mg/L
Biological Oxygen Demand (BOD)-5	9/27/2017	151	mg/L
Biological Oxygen Demand (BOD)-5	9/28/2017	266	mg/L
Biological Oxygen Demand (BOD)-5	9/29/2017	266	mg/L
Biological Oxygen Demand (BOD)-5	10/2/2017	127	mg/L
Biological Oxygen Demand (BOD)-5	10/3/2017	61.8	mg/L
Biological Oxygen Demand (BOD)-5	10/4/2017	53.6	mg/L
Biological Oxygen Demand (BOD)-5	10/5/2017	57.4	mg/L
Biological Oxygen Demand (BOD)-5	10/17/2017	56.8	mg/L
Biological Oxygen Demand (BOD)-5	10/18/2017	60.9	mg/L

4. The permit limit of 50 mg/L (90 mg/L 2009 Permit) for TSS was exceeded on the following days:

**Citation:**

Permit Number 359191-04, Part I.D.11 states, in part, *"The facility has been designed for limited public access. The treated wastewater utilized for limited public access sites must meet the following daily permissible average concentrations... c. The treated wastewater must not contain more than 50 mg/L of Total Suspended Solids."*

**Violation:**

Mountaire reported the permit limit of 50 mg/L (90 mg/L 2009 Permit) for TSS was exceeded on the following days:

Characteristic	Date	Result	Unit
Total Suspended Solids	5/25/2016	110	mg/L
Total Suspended Solids	8/30/2017	2320	mg/L
Total Suspended Solids	8/31/2017	3480	mg/L
Total Suspended Solids	9/14/2017	2840	mg/L
Total Suspended Solids	9/19/2017	490	mg/L
Total Suspended Solids	9/21/2017	2780	mg/L
Total Suspended Solids	9/26/2017	4220	mg/L
Total Suspended Solids	9/27/2017	570	mg/L
Total Suspended Solids	9/28/2017	620	mg/L
Total Suspended Solids	9/29/2017	960	mg/L
Total Suspended Solids	10/2/2017	130	mg/L
Total Suspended Solids	10/3/2017	96	mg/L
Total Suspended Solids	10/4/2017	100	mg/L
Total Suspended Solids	10/5/2017	150	mg/L
Total Suspended Solids	10/6/2017	320	mg/L
Total Suspended Solids	10/9/2017	380	mg/L
Total Suspended Solids	10/10/2017	280	mg/L
Total Suspended Solids	10/11/2017	265	mg/L
Total Suspended Solids	10/12/2017	130	mg/L
Total Suspended Solids	10/13/2017	71.2	mg/L
Total Suspended Solids	10/16/2017	76.9	mg/L
Total Suspended Solids	10/17/2017	125	mg/L
Total Suspended Solids	10/18/2017	182	mg/L
Total Suspended Solids	10/19/2017	142	mg/L

5. The permit limit of 200 colonies/100 mL for Fecal Coliform was exceeded on the following days:

**Citation:**

Permit Number 359191-04, Part I.D.11 states, in part, *"The facility has been designed for limited public access. The treated wastewater utilized for limited public access sites must meet the following daily permissible average concentrations... b. Disinfection of wastewaters containing domestic waste is required to yield a discharge not to exceed 200 col/100 mL Fecal Coliform."*

**Violation:**

Mountaire reported the permit limit of 200 mg/L for Fecal Coliform was exceeded on the following days:

Characteristic	Date	Result	Unit
Fecal Coliform (FC)	4/24/2017	800	col/100 ml
Fecal Coliform (FC)	5/25/2017	301	col/100 ml

Fecal Coliform (FC)	8/30/2017	727,273	col/100 ml
Fecal Coliform (FC)	8/31/2017	1,100,000	col/100 ml
Fecal Coliform (FC)	9/15/2017	> 8,000	col/100 ml
Fecal Coliform (FC)	9/26/2017	110,000	col/100 ml
Fecal Coliform (FC)	9/27/2017	> 1,000	col/100 ml
Fecal Coliform (FC)	9/28/2017	790,000	col/100 ml
Fecal Coliform (FC)	9/30/2017	1,400	col/100 ml

6. The permit requirement of maintaining a Total Chlorine Residual between 1.0 mg/L and 4.0 mg/L was not met on the following days:

**Citation:**

Permit Number 359191-04, Part I.D.6 which states, "*The total residual chlorine concentration shall not be less than 1.0 mg/L nor more than 4.0 mg/L at any time.*"

**Violation:**

Mountaire failed to maintain a Total Chlorine Residual (must be between 1.0 mg/L and 4.0 mg/L). Mountaire staff provided verbal non-compliance notification to the GWDS staff on September 7, 2017 that their Total Chlorine Residual values were non-compliant in July. Mountaire failed to notify of the non-compliant Total Chlorine Residual values in the 5-day Non-Compliance Notification dated September 13, 2017. Mountaire failed to report Total Chlorine Residual values in their July and August DMRs. Mountaire provided a spreadsheet with data on September 29, 2017 including data from September 5, 2017 through September 28, 2017 reporting total Residual Chlorine values less than the required permit range.

Characteristic	Date	Result	Unit
Total Residual Chlorine	9/5/2017	0.04	mg/L
Total Residual Chlorine	9/6/2017	0.03	mg/L
Total Residual Chlorine	9/7/2017	0.85	mg/L
Total Residual Chlorine	9/8/2017	0.7	mg/L
Total Residual Chlorine	9/9/2017	0.65	mg/L
Total Residual Chlorine	9/10/2017	0.7	mg/L
Total Residual Chlorine	9/11/2017	0.45	mg/L
Total Residual Chlorine	9/14/2017	0.59	mg/L
Total Residual Chlorine	9/15/2017	0.3	mg/L
Total Residual Chlorine	9/16/2017	0.39	mg/L
Total Residual Chlorine	9/17/2017	0.35	mg/L
Total Residual Chlorine	9/21/2017	0.42	mg/L
Total Residual Chlorine	9/22/2017	0.47	mg/L
Total Residual Chlorine	9/23/2017	0.4	mg/L
Total Residual Chlorine	9/25/2017	0.41	mg/L
Total Residual Chlorine	9/30/2017	0.50	mg/L

- 7. Discharged effluent inconsistent with the terms and conditions of the permit and at a level in excess of that authorized by the permit.**

**Citation:**

Permit Number 359191-04, Part I.D.6 states, in part, *"During the period beginning on the effective date and lasting through the expiration date of this permit, the Permittee is authorized to discharge to the spray irrigation field(s)...the quantity and quality of effluent specified...and in accordance with the design documents listed in Part I.B of this permit"*

Permit Number 359191-04, Part IV.A.3 which states, *"All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit."*

**Violation:**

As iterated in Violations 1 through 7 above, Mountaire discharged effluent inconsistent with the terms and conditions of the permit and at a level in excess of that authorized by the permit.

- 8. Operation of the wastewater treatment facility and spray irrigation system has continued to cause the groundwater to exceed drinking water standards for Nitrate Nitrogen.**

**Citation:**

Permit Number 359191-04, Part III.A.1 which states that, *"Operation of the wastewater treatment facility and spray irrigation system shall not cause the quality of Delaware's groundwater resources to be in violation of applicable Federal or State Drinking Water Standards on an average annual basis."*

**Violation:**

Groundwater monitoring wells have consistently exceeded the drinking water standard of 10 mg/L for Nitrate Nitrogen and have shown no improvement since Mountaire acquired ownership of the facility in May of 2000. Reported 2016 data for groundwater indicates Nitrate Nitrogen has been as high as 92.5 mg/L in March for MW-47 (DNREC ID 70678). Reported 2017 data for groundwater indicates Nitrate Nitrogen has been as high as 65.8 mg/L in March for MW-47 (DNREC ID 70678).

- 9. Failure to submit a Plan of Corrective Action relative to the effluent Total Nitrogen concentrations as required by the permitted Schedule of Compliance.**

**Citation:**

Permit Number 359191-04, Part I.F.1.a.ii which states, *"The Permittee shall submit the information necessary and/or complete the following requirements for proper compliant*

*operation of the spray irrigation system: ...Effluent Total Nitrogen concentration: ...By August 31, 2017, the Permittee must submit to the Groundwater Discharges Section a Plan of Corrective Action. The Plan must include proposed efforts to investigate the cause of the elevated Total Nitrogen concentration in the effluent, proposed modifications to the system, and a timeline for implementing proposed modifications."*

**Violation:**

Mountaire failed to submit a Plan of Corrective Action relative to the effluent Total Nitrogen concentrations as required by the permitted Schedule of Compliance, nor did Mountaire request an extension for plan submittal.

**10. Failure to properly maintain and operate all structures, pipelines, systems and equipment for collection, treatment control and monitoring which are used by the permittee to achieve compliance with the terms and conditions of the permit.**

**Citation:**

Permit Number 359191-04, Part III.A.2 which states that, *"The Permittee must properly maintain and operate all structures, pipelines, systems and equipment for collection, treatment control and monitoring which are used by the permittee to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes, but is not limited to, effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures."*

**Violation:**

As noted in Mountaire's September 20, 2017 letter, "the apparent root cause of this NCE (Non-Compliance Event) is that proper wasting of bio-solids did not occur on a routine basis."

**11. Failure to provide a five day non-compliance notification for the following violations:**

**Citation:**

Permit Number 359191-04, Part IV.A.4 which states, in part, that, *"If for any reason the permittee does not comply with, or will be unable to comply with, any effluent limitations or other conditions specified in this permit, the permittee shall provide the Department with the following information in writing within five days of becoming aware of any actual or potential non-compliance:*

- a. A description and cause of the non-compliance with any limitation or condition;*
- b. The period of non-compliance including exact dates and times; or, if not yet corrected, the anticipated time the non-compliance is expected to continue; and*
- c. The steps being taken or planned to reduce, eliminate and/or prevent recurrence of the non-compliant condition."*

**Violation:**

Mountaire failed to provide a five day non-compliance notification for:

- a. Effluent Total Nitrogen concentrations exceeding the 15.6 mg/L design value since 2015. Values have been as high as 641 mg/L in September of 2017. Mountaire's Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABA Associates, Inc., dated December 7, 2010, indicates effluent concentrations will not exceed 15.6 mg/L. Mountaire failed to notify the Department of the aforementioned non-compliant condition in writing until September 20, 2017.
- b. Non-compliant Total Chlorine Residual values. Mountaire staff provided verbal non-compliance notification to the GWDS staff on September 7, 2017 that their Total Chlorine Residual values were non-compliant in July. Mountaire failed to notify of the non-compliant Total Chlorine Residual values in the 5-day Non-Compliance Notification dated September 13, 2017. Mountaire failed to report Total Chlorine Residual values in their July and August DMRs. Mountaire provided a spreadsheet with data on September 29, 2017 including data from September 5, 2017 through September 28, 2017 reporting total Residual Chlorine values less than the required permit range. Reported non-compliant data is listed in Violation Number 6.
- c. Bypassing storage and discharging directly from the clarifiers to the center pivots as verbally reported to GWDS staff on September 7, 2017 and reported in writing on September 20, 2017.

**12. Diverted flows by-passing part of the treatment facility's permitted process flow:****Citation:**

Permit Number 359191-04, Part III.A.23 which states, "*The diversion of flow from any portion of the treatment facility's process flow (including, but not limited to, pretreatment, storage, distribution and land application) necessary to maintain compliance with the terms and conditions of this permit is prohibited unless:*

- a. *The bypass is unavoidable to prevent personal injury, loss of life, severe property damage, or materially adversely affect public health and/or the environment; or*
- b. *There are no alternatives readily available.*

*The Groundwater Discharges Section must be orally notified within 24 hours after such bypass; and, a written submission regarding the bypass must be submitted within five days of the Permittee's becoming aware of the bypass. Where the need for a bypass is known (or should have been known) in advance, this notification must be submitted to the Groundwater Discharges Section for approval at least ten days prior, or as soon as possible, before the date of bypass.*

*The treatment facility must be repaired and restored to the permitted design operations process flow."*

**Violation:**

On September 7, 2017 the Department received verbal notice from Mountaire's operational staff that not all flow from the clarifiers was discharging into the storage lagoon.

Investigation by Mountaire's staff found lines discharging directly from the clarifiers to center pivots. Mountaire failed to submit written notification until September 20, 2017 after being required by the Department in a September 15, 2017 letter.

**13. Failure to monitor and/or report complete representative data****Citation:**

Part II.A and Part II.B of Mountaire's 2017 permit [Part I.G and Part I.I of the 2009 Permit] prescribes monitoring and reporting requirements for influent, effluent, groundwater, lysimeter, vegetation, and operations.

**Violation:**

A. August 2017 Discharge Monitoring Report reviewed in accordance with the 2017 Permit 359191-04:

- 1) Failed to report Influent Total Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Phosphorus and Chloride.
- 2) Failed to report Effluent Maximum Daily Flow, pH and Total Chlorine Residual.
- 3) Failed to report monthly worksheet and calculations demonstrating effluent to zone/field/pivot, Nitrogen Loading Rate (lbs/acre), Phosphorus Loading Rate (lbs/acre) for fields CB3 and CB3A.
- 4) Failed to provide lab data sheets for Influent monitoring.

B. July 2017 Discharge Monitoring Report reviewed in accordance with the 2009 Permit 359191-02:

- 1) The September 5, 2017 letter accompanying the DMR indicated that the.... "July 31st analysis is not representative of the effluent on that day. It appears that the composite sampler was sampling only from clarifier A which had a low flow rate with a clear discharge while clarifier B effluent had solids carryover. Although I have attached the remaining required lab analysis for the effluent, I cannot submit this information on the SMR as the data collected for July appears to be invalid. The composite sampler has now been relocated to the wet well that collects the effluent from both clarifiers, and we anticipate that the data collected for future SMRs will reflect actual conditions."
- 2) The 2009 permit requires Fecal Coliform be monitored at the spray irrigation pivot. Therefore, Fecal Coliform should have been able to have been reported on the DMR.
- 3) DMR was signed certifying "the submitted information is true, accurate and complete" though the forms were not complete and the September 5, 2017 letter indicated the data was collected in a location that did not accurately reflect the effluent.
- 4) Failed to report Effluent Maximum Daily Effluent Flow to all Spray Fields.
- 5) Failed to report results on DMR for Ammonia Nitrogen, BOD5, Fecal Coliform, Nitrate + Nitrite Nitrogen, Oil and Grease, Organic Nitrogen, pH, Total Nitrogen,



- Total Phosphorus, Total Residual Chlorine, and Total Suspended Solids. Lab data sheets provided for all but pH and Total Residual Chlorine.
- 6) Failed to report monthly worksheet and calculations demonstrating Nitrogen Loading Rate (lbs/acre) and Phosphorus Loading Rate (lbs/acre) for all fields.
  - 7) Failed to provide lab data sheets for Influent.
- C. June 2017 Discharge Monitoring Report reviewed in accordance with the 2009 Permit 359191-02:
- 1) Failed to report Effluent Maximum Daily Effluent Flow to all Spray.
  - 2) Failed to report groundwater monitoring results for monitoring wells MW-23 (243365), MW-42 (70673), MW-43 (70674) and MW-47 (70678) for Ammonia, Arsenic, Chloride, Dissolved Oxygen, Nitrate + Nitrite Nitrogen, pH, Sodium, Specific Conductance, Temperature, Total Dissolved Solids, Total Nitrogen, and Total Phosphorus. Only Depth to Water was reported.
  - 3) Failed to report quarterly lysimeter monitoring results. Last quarterly results received by the GWDS were for March 2017. Quarterly results were due in June 2017.
  - 4) Failed to provide lab data sheets for Influent.

### SPRAY IRRIGATION - ACTIONS REQUIRED

- S1. Mountaire must return the facility to compliant operation in accordance with permit limitations and design specifications. By December 1, 2017, Mountaire must submit a corrective action work plan (Plan) to the GWDS for review that details corrective actions, timelines for the actions, as well as, purpose and anticipated results from each action.
- a. The Plan must detail any proposed repairs, restoration, and upgrades to the treatment facility; timeframes to completion; rationale for implementation and expected results.
  - b. The Plan must also include Mountaire's short term and long term actions to address the excessive nitrogen loading on the spray irrigation fields.
- S2. Spray Irrigation:  
Mountaire is currently spraying effluent that does not conform to permit requirements. The Department is not approving/condoning spraying of non-conforming effluent on any of Mountaire's spray fields. However, if Mountaire continues to spray non-conforming effluent, as a minimum mitigation requirement for the protection of human health and the environment, Mountaire must:
- a. Continue until further notice, restrictions on spray irrigating during wet weather events to prevent ponding from occurring.
  - b. In the event fecal coliforms exceed permit limits, implement an additional 150 foot buffer distance on each spray field and cease spray operations in windy (> 15 mph) conditions to prevent aerosol migration onto any public or access road from occurring.
- S3. Effluent Monitoring: Continue until further notice, daily effluent monitoring for Fecal Coliform, Total Suspended Solids, Total Dissolved Solids, BOD5, Total Nitrogen, Ammonia Nitrogen, Organic Nitrogen, and Total Residual Chlorine. Fecal Coliform and Total Residual Chlorine should continue to be sampled at the spray irrigation pivot.

- All other parameters shall be sampled at the combined total clarifier (CTC) composite sampling location.
- a. Results should be expedited. Fecal Coliform and Total Nitrates should be reported to GWDS immediately upon verbal notification from the lab.
  - b. All other results can be summarized daily via email. Full lab reports should be submitted with bi-weekly reports unless requested sooner by the Department.
- S4. Groundwater Monitoring: Continue and until further notice, increasing the groundwater sampling as required in Part II.A.3 of Mountaire's Permit to monthly until instructed by the Department that a reduction in sample frequency can occur.
- a. Results should be expedited and reported to GWDS immediately upon notification from the lab.
- S5. Surface Water Monitoring: By December 1, 2017, and until further notice, Mountaire must begin monthly surface water sampling in accordance with the *Surface Water Monitoring Plan* submitted on October 6, 2017 and with the Department's required modifications and additions in its letter dated November 1, 2017.
- S6. Mountaire must continue to provide GWDS with progress reports on a bi-weekly basis. Progress reports should describe with reasonable specificity all steps taken to date to return to compliance and should describe results of remedial actions and should document current storage lagoon levels. Each bi-weekly report must also continue to include an updated spreadsheet summarizing per field: effluent flows, effluent Total Nitrogen concentration (mg/L) and Nitrogen loading (lbs/acre) summarized on a monthly basis and totalized for the year for comparison to the permitted limitation of 320 lbs/acre-year Nitrogen Loading. The spreadsheet should include all sources of Nitrogen to each field (e.g. fertilizer).
- S7. By December 1, 2017, Mountaire must provide the following information relative to the system bypass as requested in the Department's September 15<sup>th</sup>, 29<sup>th</sup>, and November 1<sup>st</sup> letters:
- a. Levels of contaminants of concern in the clarifiers vs. the storage lagoon.
  - b. Explanation of how bypass is warranted in accordance with Part III.A.23 of Mountaire's permit.
- S8. System Analysis: In accordance with the *Wastewater Treatment Facility System Sampling Analysis, and Process Control Procedures* submitted on October 6, 2017, Mountaire must:
- a. Perform microscopic observations of the biomass, to identify filamentous overgrowth before it can reduce clarifier performance. Best Management Practices and Best Professional Judgement would indicate that the microscopic examinations should be completed on a daily basis, and that the microscopic examinations are quantifiable and documented.
  - b. Ensure that system Dissolved Oxygen concentrations are monitored and documented, and that the proper limits are maintained in the treatment system. Ensure that the proper sludge blanket levels are maintained in the clarifiers and that the solids are not maintained in the clarifiers for too long a time period. Treatment Plant Standard Operating Procedures must indicate how sludge blanket depths are determined and what the acceptable range is.

- c. Continue to follow the formal written procedure submitted to the GWDS on October 6, 2017.
  - d. Once Mountaire has developed and implemented the Treatment Plant SOPs please forward them to the Department for review and concurrence, this should be accomplished by November 30, 2017.
- S9. By December 1, 2017, Mountaire must provide a narrative description to the GWDS with a re-established, more suitable effluent sampling location that accurately represents all effluent flow.
- S10. By February 28, 2018 and by February 28<sup>th</sup> each subsequent year, Mountaire must determine facility operations in accordance with Operations and Maintenance Manuals regarding organic removal efficiency. Mountaire must include a copy of the Delaware Biosolids and Residuals Reporting System (BARRS) Report with the Spray Irrigation Annual Report.

## **Part II. Agricultural Utilization Permit AGU 1402-S-03**

### **AGRICULTURAL UTILIZATION - BACKGROUND:**

The Department of Natural Resources and Environmental Control's (Department) Surface Water Discharges Section (SWDS) met with a Mountaire representative on September 8, 2017. The purpose of meeting was to provide Department staff an opportunity to observe a former sludge storage lagoon that Mountaire has proposed utilizing for temporarily staging and dewatering of anaerobic lagoon sludge. It is the Departments understanding that due to the lack of regular maintenance on the anaerobic lagoons, Mountaire is in the position where the removal and temporary storage of anaerobic sludge is necessary as soon as possible. Removal of sludge is necessary to improve the efficiency of the anaerobic lagoon and ultimately help improve poor wastewater effluent quality. Additionally, the temporary storage of the anaerobic sludge is necessary to provide Mountaire additional time to dewater the anaerobic lagoon sludge, acquire additional land, and secure permits for land application of sludge thereon.

At the time of the Department's site visit, Mountaire indicated that the land application of return activated sludge from the Millsboro Mountaire wastewater treatment plant had been ongoing throughout the summer and continued through the date of the site visit (approximately 2,000,000 gallons). State Permit Number AGU 1402-S-03 requires a minimum two working day of notice prior to application each year; however, the Department had not been notified of any land application activities in 2017. The Mountaire representative indicated that they were unsure if over application of nutrients had occurred as the employee that oversaw the land application program recently left Mountaire and Mountaire was in the process of reviewing application records. Additionally, the Mountaire representative indicated that they were unsure at what loading rate sludge had been applied onto previous application fields earlier in 2017 or the loading rate sludge was being actively being applied onto the current application field. The Mountaire representative indicated that Mountaire would obtain the necessary application information and submit it to the Department.

At the conclusion of the Millsboro Mountaire site visit, the Department visited the Mountaire land application farm known as Thorogood farm and observed the ongoing application on the west portion of the farm. The application appeared to be even, almost no sludge remained on the surface, and no odors/vectors were noted; however, buffer areas for the field were not flagged as required in State Permit Number AGU 1402-S-03. The east portion of the field had a soybean crop; however, the crop appeared to be producing poor yields with several areas in the field showing minimal or no growth.

During a September 15, 2017 phone call, the Department asked Mountaire for the current loading rate of Plant Available Nitrogen (PAN) onto the Thorogood farm. The Mountaire representative indicated that they were unsure how to calculate the nutrient loading rate, as required by the Biosolids Regulations and State Permit Number AGU 1402-S-03. On September 19, 2017 Keen Consulting sent an email to the Department on behalf of Mountaire documenting sludge application by Mountaire from January 2017 to present. This document reflected that Mountaire applied 266 pounds of plant available nitrogen per acre onto a portion of the Frame Farm. Based on the proposed crop plan in Mountaire's 2016 annual report, application onto the Frame Farm exceedance of the agronomic loading rate likely occurred. Additionally, State Permit Number AGU 1402-S-03 requires fields to be planted with an appropriate crop within once (1) month of completing sludge application, unless prohibited by weather conditions. On September 8, 2017 a Mountaire representative indicated that land application onto portions of "Frame Farm 880-C and 880-D", had recently concluded. The Department indicated that it was critical to plant a crop on "Frame 20" as soon as possible to minimize the leaching of nutrients into groundwater. According to Mountaire, as of October 24, 2017, the Frame Farm had not been planted. September and October 2017 have not had long periods of inclement weather that would prevent planting an appropriate crop.

#### AGRICULTURAL UTILIZATION - VIOLATIONS

#### **14. Application of Biosolids Without Submitting a Cropping Plan to the Department for Review:**

##### **Citation:**

Part I, A.1 of State Permit Number AGU 1402-S-03 permit states:

*"Sludge and DAF shall be applied at a rate to meet, but not exceed, the PAN requirement for the crop(s) grown. The PAN application rates shall also include any residual mineralized nitrogen from previous sludge and DAF application. The cropping plan and the nutrient requirement for that crop shall be submitted to the Department, prior to sludge and DAF application, for review and approval."*

##### **Violation:**

Mountaire did not provide the Department with its cropping plan and the nutrient requirement for the crops being grown, as required in State Permit Number AGU 1402-S-03. To date, Mountaire has not provided the Department with a crop plan for the remainder of 2017 and

2018. According to a submittal by Keen Consulting on behalf of Mountaire, 266 pounds of PAN per acre was applied onto a portion of Frame Farm 880-C and 880-D. Previous crop yields on the Frame Farm indicate that 266 pounds of PAN likely exceeds the agronomic rate for the Frame Farm. Mountaire did not provide the Department with a cropping plan or receive approval prior to applying nutrients and is therefore in violation of State Permit Number AGU 1402-S-03.

**15. Violation No. 4 – Failure to Plant an Appropriate Crop at the Conclusion of Application Activities:**

**Citation:**

Part I, A.2 of State Permit Number AGU 1402-S-03 permit states:

*“Fields must be planted with appropriate vegetation or a cover crop within one (1) month of completing sludge application, unless prohibited by weather conditions in which case vegetation must be established as soon as practicable.”*

**Violation:**

Mountaire did not plant an appropriate crop within one (1) month of completing sludge application onto portions of “Frame Farm 880-C and 880-D” that recently received sludge application. Mountaire violated crop planting requirements in State Permit Number AGU 1402-S-03.

**16. Failure to Mark Buffer Zones Prior to Sludge Application:**

**Citation:**

Part III, A.4, a. of State Permit Number AGU 1402-S-03 permit states:

*“Prior to the application of sludge, buffer zones and the areas on which sludge is to be applied must be clearly marked with stakes or other suitable markers acceptable to the Department.”*

**Violation:**

Mountaire did not mark buffer zones for the Thorogood East, Frame Farm 20, and Thorogood West Farms, prior to sludge application. Mountaire violated the buffer zone marking requirements in State Permit Number AGU 1402-S-03.

**17. Violation No. 3 – Application of Biosolids to Application Sites Without Notifying the Department:**

**Citation:**

Part III, A.4, b. of State Permit Number AGU 1402-S-03 permit states:

*“The permittee must notify the Department at (302) 739-9946 at least two (2) working days prior to the application of sludge.”*

**Violation:**

Mountaire did not provide the Department with prior notification of application activities, for the Thorogood East, Frame Farm 20, and Thorogood West Farms, during the 2017 calendar year. Mountaire violated the land application notification requirements of State Permit Number AGU 1402-S-03.

**AGRICULTURAL UTILIZATION - ACTIONS REQUIRED**

- A1. By November 30, 2017, Mountaire shall submit detailed land application records for the Frame Farm 20, Thorogood East Farm, and Thorogood West Farm documenting the gallons of sludge land applied in 2017.
- A2. By November 30, 2017, Mountaire shall submit a crop rotation plan and a nutrient management plan for 2018 and the remainder of 2017. The crop rotation plan shall include the "winter crops" that will be planted on sites that received sludge application in 2017. The nutrient management plan shall document the amount of plant available nitrogen to be applied from sludge and other sources (listed separately) for 2018 and the remainder of 2017 in accordance with agronomic rate requirements in Part III, B. of the Guidance and Regulations Governing the Land Treatment of Wastes and State Permit Number AGU 1402-S-03.
- A3. By November 30, 2017, Mountaire shall demonstrate that the portions of Frame Farm 880-C and 880-D that were recently utilized for sludge application have been planted with an appropriate crop.
- A4. By November 30, 2017, Mountaire shall submit a written explanation explaining the poor crop growth in the Thorogood East Farm.
- A5. By November 30, 2017, Mountaire shall submit soil testing results for the parameters required annually in Part I.B.4 of State Permit Number AGU 1402-S-03 for the Thorogood East Farm.
- A6. By November 30, 2017, Mountaire shall submit the date the former sludge land application manager left Mountaire.

**NOTICE**

This letter shall serve as official Notice of the above violations of 7 *Del.C.* Chapter 60, 7 *Del.Admin. C. § 7101 Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems* (Regulations), State Permit 359191-04 (Permit), 7 *Del.Admin. C. § 7103 Guidance and Regulations Governing the Land Treatment of Waste* (the Biosolids Regulations) and State Permit AGU 1402-S-03. In order to come into compliance with the Regulations and the Permit requirements, Mountaire shall perform the corrective actions in the timeframes specified above.

Failure to comply with this **Notice of Violation** will result in further enforcement action as provided in 7 *Del.C.* Ch. 60. In addition, the Department reserves the right to place additional requirements on Mountaire and pursue additional enforcement action based on future site inspections, data, and/or after a more detailed review of the violations.

Mountaire Farms of Delaware, Inc.  
Notice of Violation W-17-GWD-13  
November 2, 2017

20

If you have any questions or concerns, please feel free to contact me at (302) 739-9948. This **Notice of Violation** will be posted on the DNREC website at <http://apps.dnrec.state.de.us/Violations/ViolationsSearch.aspx>.

Sincerely,



Jennifer S. Roushey  
Environmental Program Administrator  
DNREC – Division of Water

Cc: Beth Sise, Mountaire  
John Wren, Mountaire  
Jack Hayes, DNREC

# EXHIBIT D



# EXHIBIT E

**EXHIBIT F**  
**RESIDENTIAL AREA**



5/29/2018

Exhibit F - Residential Area

## **EXHIBIT G**

### **ENVIRONMENTALLY BENEFICIAL OFFSET**

In accordance with the provisions of Section VI, Paragraph 36 of the Consent Decree Mountaire shall arrange for the availability of a central water supply system to the residential property owners in the area designed on Exhibit F hereof and marked Residential Area. In the alternative, if reasonable efforts to provide the availability of a central water supply system are unsuccessful, Mountaire shall offer to provide to the owners of residences in the Residential Area deep wells with necessary treatment systems to provide potable water which meets the applicable drinking water standards.

#### Central Water Supply System

A. Mountaire shall arrange for Tidewater to commence the process of obtaining the approval of the Delaware Public Service Commission ("PSC") for issuance of a certificate of public convenience and necessity ("CPCN") to provide a central water supply system to the Residential Area in accordance with the provisions of 26 *Del. C.* § 203C. DNREC will provide assistance to Tidewater in producing evidence to be used by Tidewater to establish that some of the drinking water in the Residential Area does not meet the governing drinking water standards of the Delaware Department of Health and Social Services for human consumption. Within thirty (30) days of obtaining the necessary evidence that some drinking water

in the Residential Area does not meet the drinking water standard, Mountaire shall cause Tidewater to file the necessary application with the PSC to supply drinking water to the Residential Area and continue to timely and diligently pursue final PSC approval for issuance of a CPCN.

B. Upon obtaining final PSC approval and issuance of a CPCN, Mountaire shall cause Tidewater to proceed to timely take the necessary actions to design, construct and make available the central water supply system to the Residential Area, subject to obtaining necessary local, county and State approvals. Within fifteen (15) months of obtaining the necessary approvals, the central water supply system will be in place and available for use.

C. For any owner of a residence in the Residential Area wishing to connect to the central water supply system Mountaire shall arrange for and provide the physical connection of the residence to the central water supply system such physical connection to be at no cost to the owner of the residence.

#### Alternative Water Supply

A. In the event final approval and issuance of a CPCN for a central water supply system for the Residential Area cannot be obtained, Mountaire shall offer to provide to all owners of residences in the Residential Area the installation of a deep well on the residential property with any necessary treatment system to provide potable water which meets the applicable drinking water standards at no cost to the

owners of the residences. Such offer shall be made to the residential property owners within forty-five (45) days of the date it is determined that final PSC approval of a CPCN cannot be reasonably obtained, and Mountaire shall provide to DNREC within thirty (30) days thereafter a report on its efforts to contact the owners of the residences and their responses to the offer.

B. For those owners of residences in the Residential Area who accept the offer of installation of a deep well Mountaire shall coordinate and assist such owners in obtaining the necessary approvals for the installation of the wells, and after such approvals are obtained proceed to have the wells installed within sixty (60) days of the date of each approval.

The availability of a central water supply system or the alternative installation of deep wells with treatment systems in the Residential Area as provided hereunder shall not be dependent on whether or not the then current drinking water supply meets the drinking water standard.

## **EXHIBIT H**

### **MITIGATION MEASURES**

A. The Spray Permit as issued on July 31, 2017 imposes the following total nitrogen (TN) related limitations on the spray effluent:

1. The Facility has been designed for a monthly effluent total nitrogen (TN) concentration of 15.6 mg/l.
2. The total of nitrogen (TN) in the effluent allowed to be sprayed on the spray fields is 320 lbs/acre/yr.

Mountaire shall calculate the quantity of total nitrogen (TN) in pounds using the Facility's monthly total nitrogen (TN) sampling data in conjunction with the total monthly effluent volume to determine how much total nitrogen (TN) has been and is being applied to the spray fields in excess of the above permit conditions. This calculation will be performed for the period of time beginning from the issuance of the current Spray Permit, Permit No. 359191-04, until the upgrade to the WWTF is completed and the WWTF is operational. Mountaire will submit the calculations of the quantity of total nitrogen (TN) to DNREC on a monthly basis with Mountaire's monthly Discharge Monitoring Reports (DMRs) following entry of the Consent Decree for DNREC's review and consent.

B. The nitrogen (N) sprayed on the fields converts to nitrates ( $\text{NO}_3$ ) as it enters the groundwater. Mountaire will relocate its process water production wells

which draw from the surface aquifer to areas of the spray fields with consideration given to areas which have higher concentrations of nitrates, and the groundwater containing such higher levels of nitrates will be used as process water for the Facility. The location of the relocated process water production wells shall be determined in cooperation with and coordination with DNREC, and proposed locations shall be submitted for DNREC's review and consent. The locations and number of relocated production wells shall be sufficient and feasibly capable of satisfying Mountaire's process water needs. The relocated process water production wells shall be installed in advance and available for use at such time as the upgraded WWTF becomes operational. Process water produced by the relocated production wells, along with waste material, will be treated at the upgraded WWTF. In order to determine the net reduction of nitrates in the groundwater the nitrate concentrations in the relocated production wells shall be measured along with the quantity of flow withdrawn at each individual well in order to determine the amount of nitrates in pounds which are withdrawn. Next, the corresponding quantity of flow from the relocated production wells shall, along with the concentration of nitrates in the treated effluent, be used to determine the amount of nitrates sprayed on the fields. The difference between the amount of nitrates withdrawn from the relocated production wells and the amount of nitrates sprayed on the fields shall be the net reduction in nitrates achieved. The calculations of the net reduction of nitrates shall be made on a weekly



basis. On a monthly basis with Mountaire's monthly Discharge Monitoring Reports (DMRs), Mountaire shall submit its weekly calculations of net nitrate removal as compared to the excess quantity of total nitrogen (TN) sprayed on the fields determined under Paragraph A above. At a minimum, Mountaire shall remove nitrates, as mass, from groundwater equaling two times (2X) the mass of excess total nitrogen (TN) applied to the spray fields as determined under Paragraph A above. Nothing herein shall be construed to require Mountaire to extract groundwater in excess of its process water needs.

C. Mountaire, in consultation with DNREC, shall be entitled from time to time to further relocate the process water production wells to locations designed to capture higher levels of nitrates in the groundwater based on available groundwater monitoring data, provided that the number and location of such production wells shall be sufficient for, and capable of, satisfying Mountaire's process water needs. Mountaire shall utilize data from existing groundwater monitoring facilities and equipment, along with data from any necessary additional groundwater monitoring facilities and equipment, to evaluate the overall effectiveness of the nitrate removal mitigation process and assess the level of hydraulic control established of the groundwater underlying the Mountaire property. Upon completion of this mitigation effort, Mountaire will maintain its production wells in locations designed to apply hydraulic control beneath the spray fields.

D. It is recognized that there are historic and current sources of nitrates which through groundwater flow enter onto the Mountaire property. Nothing shall limit or preclude Mountaire from pursuing action against parties that contribute nitrates to the groundwater on its property.